

# The Dental Digest.

---

Vol. II.

CHICAGO, AUGUST, 1896.

No. 8.

---

## Original Contributions.

---

### PYORRHŒA ALVEOLARIS OR RIGGS' DISEASE. ETIOLOGY, PATHOLOGY, CHARACTERISTICS, TREATMENT.

BY JUNIUS E. CRAVENS, D.D.S., INDIANAPOLIS, IND., READ AT THE TWENTY-SIXTH ANNUAL MEETING OF THE KENTUCKY STATE DENTAL ASSOCIATION, AT LOUISVILLE, JUNE 16-18, 1896.

It affords me pleasure to declare to the dental and medical professions that what is known as Riggs' disease, or *pyorrhœa alveolaris*, is curable; not occasionally and merely accidentally, as has been its history, but systematically and by well defined procedure; that it is quite as amenable to proper treatment as any other form of periosteal lesion; that no other chronic inflammation of any tissue responds more favorably and promptly to positive and thorough surgical practice.

From various observable points in connection with this disease it is fairly doubtful that it is a strictly dental disease. On the contrary there is much to indicate that the teeth are merely involved incidentally; the pericementum involved in "pockets" of pyorrhœa alveolaris is seldom if ever found to be congested—when affected teeth are extracted. In the progress of this disease the only tissue really destroyed is alveolar process, and that local to the alveolus or socket, most frequently and extensively in the masses separating the sockets.

With the exception of one, all the names applied to this disease indicate nothing in reference to dental tissues, and while it must be dignified as a distinct disease it is only a *periosteitis* with concomitant osteitis. According to my deductions I have advanced the

name of *alveolar periosteitis* as proper and fitting for this affection. There is not always pyorrhœa in these cases and sometimes pus cannot be easily demonstrated.

The causes, pathology and diagnosis of periosteitis are so closely applicable to what is called pyorrhœa alveolaris, that doubtless you would be interested, if not instructed, by a presentation of some conspicuous parallels. In the "Reference Hand-Book of the Medical Sciences" there is a chapter devoted to periosteitis, osteitis, etc., by Dr. R. H. M. Dawbarn, from which, and from "Greene's Pathology and Morbid Anatomy," I shall offer some quotations, to which I invite your attention, as applicable to the facts of this disease that has baffled the best efforts of hand and head in our profession for a century. Periosteitis operates either to destroy or build up, which shows it to be a true inflammation; this double character or activity should be held in mind by the dental practitioner who essays to treat pyorrhœa alveolaris, as it plays a very conspicuous part in what I have characterized as the "tragedy of cure." On this latter point Dawbarn says: "Chronic, non-infective periosteitis may be either fibrous or ossifying. In the former (fibrous) there is much increase in the amount of connective tissue, and the thickened membrane adheres unusually closely to the bone; in the latter (ossifying) we have as a result an ossific deposit." To apply this statement to the facts of Riggs' disease, we may invade the socket, where we find a mass of connective tissue, highly vascular, lining the "pocket" supposed to be pyorrhous. This mass of connective tissue is the apparatus of destruction, or of repair, as the case may be; its existence is a clinical fact that becomes familiar to those who operate in the alveoli affected by this disease. The mass of soft tissue as we always discover it, is the organ of destruction by which the socket is eventually destroyed and the tooth lost; its action will continue the same so long as the mass remains undisturbed. The parallel for this in periosteitis is to be found in the following statement by Dawbarn: "In periosteitis and rarefying osteitis, the absorption of bone is thought by some pathologists to be caused by the presence of certain large, multi-nucleated cells, the myeloplaques of Robin, called, from this idea—osteoclasts. . . . Other pathologists disbelieve that these large cells possess any such power, and attribute the absorption to the new granulation tissue always present in these cases and lying in contact with the bone."

The following statement in Greene's Pathology is particularly applicable to the spongy bone of the alveolar ridge: "The mildest form (of osteitis) described, is that in which granulation tissue is produced. This occurs much oftener in cancellous than in compact bone."

Dawbarn says that, "It is of little clinical value to class inflammations of bone into osteitis, osteomyelitis and periosteitis from an anatomical standpoint, since primary periosteitis, with exception of the traumatic and syphilitic varieties, is very rarely observed." Also, that periosteitis and osteitis are concomitant, we have Greene's statement that, "Periosteitis implies that the periosteum is inflamed, but the superficial layers of the bone always suffer too."

According to my observation, the primary inflammation in Riggs' disease occurs in the periosteum on the alveolar ridge, about the orifice of the tooth socket; for convenience and exactness I have called this primary condition *orbicular periosteitis*, the visible indication being that known as gingivitis. For a parallel for this primary inflammation, in periosteitis in other localities, Greene gives the following: "Inflammation of bone always originates in the vascular structures, the periosteum and medulla."

As to progress of pyorrhœa alveolaris, orbicular periosteitis having set up on the ridge, we would first have gingivitis; from a comparatively simple and harmless gingivitis the periosteitis may be extended into the socket; then will arise the conditions that constitute what is called pyorrhœa alveolaris, or Riggs' disease.

The causes of periosteitis are numerous and well known generally, but occasionally no cause is discoverable. The causes of Riggs' disease have been subject to much disputation, but I have adhered to the proposition that the origin is local always and the influence of the disease is not extended beyond its own socket, except such pernicious effects as may be anticipated from exuding pus which passes into the stomach. Dr. Dawbarn gives a series of causes of periosteitis and osteitis, which are equally applicable to pyorrhœa alveolaris, as doubtless you will recognize as I read them, as follows: "Inflammation of bone may be induced by simple traumatism, . . . by extension from a periosteitis, by extension from arthritis, by exposure to cold, or to action of certain poisons, as phosphorus, mercury, syphilis; by pressure, by eruptive fevers, typhoid possibly acting as a primary and certainly as a predisposing cause." Of

these causes probably the most frequent to occur in the mouth is that of simple traumatism, the little woundings from inadvertent thrusts with wooden toothpicks—no seamstress hesitates to fill her mouth with pins and needles and many use them for picks; inadvertent laceration of the gum at the cervix of a tooth, particularly between the teeth, may set up an inflammation that, finally being extended to the socket, results in pyorrhœa alveolaris. Speaking of periosteitis arising from traumatism, Dawbarn says: "Periosteitis may originate from traumatism either simple or compound, and in character may be *simple* [aseptic] or *septic* from the presence of micro-organisms." Thus we discover the causes of osteitis and periosteitis and pyorrhœa alveolaris to be practically identical as applied in the mouth according to probabilities.

The casualties to the gum most commonly noted, and which are all sufficient to induce periosteal inflammation, are dam-clamps, which rarely can be adjusted so as to do no violence to the gum—even protracted pressure incident to tedious contour operations may result in the establishment of periosteitis in the cervical region; also, there are impinging ligatures; badly adjusted regulating apparatus; ill-fitting plates of teeth; awkward thrusts and slips of instruments, often none too clean, in the hands of the dentist, often none too clean; splinters from wooden toothpicks, etc. The list of oral accidents is endless.

Gingivitis may endure for a long time before finally invading the alveolus, and thus the cause of the resultant Riggs' disease may be lost. It may be possible that what we recognize as aggravated gingivitis is due to a "simple" or "aseptic" periosteitis, while that which is "septic" is responsible for *extension* to the sockets. In either case the condition is strictly local and "non-infective." Tillmann's later researches advance the idea that the bone in cases of osteitis and periosteitis, etc., is dissolved away by the carbonic acid contained in the blood, which is present in the "new granulation tissues." Pyorrhœa alveolaris can not be hereditary, but a condition of tissues may be inherited that would tend to the establishment of this disease, just as a natural weakness of chest and lungs may eventually permit development of consumption.

As to treatment, the first step is to remove *all* calculus from affected roots and lacerate or even tear away the "granulation tissue" within the "pocket"; the first or surgical operation should be closed

by douching the "pocket" with an astringent stimulant of acidulated nature, for which I have found nothing equal to dilute sulfuric acid. After a sufficient time has elapsed for granulations of repair to be well set up, the case should be purified and stimulated, and flooded with an astringent and stimulant of a more pronounced and permanent effect than sulfuric acid, and possibly of germicidal properties. For this latter purpose I have found a 10 per cent solution of nitrate of silver to be most effective. The discoloration of the teeth and fillings may be removed after all treatment has terminated.

As my system of treatment is based on a conception that Riggs' disease or pyorrhœa alveolaris is a periosteitis, my conception of a cure demands establishment of *scar tissue*; apropos, a statement from Greene's Pathology may be considered, as follows: ("Osteitis,") "The mildest form described is that in which granulation tissue is produced. This occurs much oftener in cancellous than in compact bone. . . . In a very early case absorption might occur, and regeneration make good any loss. But, when once marked destruction of bone has occurred, *scar tissue must form and ossify* if a cure is to be effected."

In conclusion, I will state that my quotations are merely extract scraps picked out here and there to fit the case, because the mass of matter from which these were culled pertains to the general subject of periosteitis, osteitis and osteomyelitis, and whole statements do not apply to pyorrhœa alveolaris or alveolar periosteitis, which the authorities given have never considered, although Greene's work is used extensively as a text book in schools of dentistry.

---

## LOWER PLATES.

BY J. F. FRIBLEY, D.D.S., DECATUR, ILL.

Of all the departments of dentistry in which the "rank and file dentist" of to-day is called upon to do work, perhaps prosthetic dentistry is the most difficult and unsatisfactory. This is due largely to distaste for the work, drudgery of details, modification of type of subject and non-appreciation of good work by the public in general, caused by the cheap substitutes for dental work offered by quack dentists in the columns of our newspapers.

The dentist who can make an artificial denture for the lower jaw

which will subserve the purpose for which the lost dental organs were used, to the extent that the patient feels a sense of satisfaction and gratification in the wearing of it, is truly a very remarkable and ingenious person.

I have, like others, had some unsatisfactory experiences along this line and am convinced of the fact that, "as a rule, we learn more from our failures than our successes."

However, I have but little to say about lower cases where the teeth are all out, except to offer one method I have of taking impressions when the ridge is hardly perceptible, and the muscular attachments are so near together on the top of the ridge that there is hardly a line of space where the plate could rest undisturbed by the action of the muscles in movements of the jaw and in mastication. In such cases I exercise care in taking the impression, having the plaster not too thick, and just as soon as the cup can be inverted without the plaster dropping out I at once put it in place in the mouth, requesting the patient to move the jaw as in the process of mastication, and being careful to hold the cup firmly when once in place and to follow each movement.

This is kept up until the plaster is of a putty-like consistency. Then, of course, the jaw can come to rest, as there can be nothing gained by keeping up the movement.

After removing the impression from the mouth in time there are to be seen small grooves, depressions and elevations, which correspond exactly to the muscles, depressions and elevations of the ridge of the jaw, and when the plate is made it will fit perfectly and not be displaced during the process of mastication or in other movements of the jaw. In partial lowers I use the same precaution in taking the impression as in full cases where the same conditions exist.

Now, I wish to give a description and process of making a lower partial plate when the posterior teeth are out on both sides.

It consists of a plate with a clasp on the buccal surface only, and a swaged aluminum band vulcanized into the rubber which attach the posterior teeth. After taking an impression I fill with metal (moldine), being careful to get an exact copy of the lingual surfaces of the remaining anterior teeth and the gums and gum margins. Then I make a counter die and swage an aluminum band to fit the lingual surfaces, having points of aluminum fitting into the interproximal spaces—this is of the utmost importance. The ends of the

band should extend far enough back into the rubber on either side to give a firm attachment.

Then fit a band of clasp metal to the buccal surface of the teeth, proximating the denture on either side, and having the inside end of the clasp to fit and extend around the distal surface of the tooth till it touches the aluminum band and fit up to it.

The aluminum band or strip which fits the lingual surfaces of the teeth intact should be tempered to make it springy, and when the plate is pushed to place the points of the band drop into the interproximal spaces, and, with the clasps on the outside of the teeth next to the artificial denture, it makes a very comfortable and well adapted plate.

---

### CARE OF THE TEETH IN CHILDHOOD.

BY DR. W. E. GRANT, LOUISVILLE, KY., READ AT THE TWENTY-SIXTH ANNUAL MEETING OF THE KENTUCKY STATE DENTAL ASSOCIATION AT LOUISVILLE, JUNE 16-18, 1896.

The responsibility of the care of teeth in childhood should be deeply felt by each member of our profession and every heart should be stirred by the pathetic cry for advice and aid. No other branch of our professional duties requires so far an insight into the future and such careful reasoning as does this one. I had hoped that some member would present a paper on the care of mothers during pregnancy, and instruction of mothers and nurses regarding proper care of the infant's gums and teeth. The general medical practitioners and nurses are neglectful of their trusts at this important period. The general practitioner has so many cares that he is likely to overlook this one, while mothers and nurses rely almost entirely on him for instruction. The general impression is that the duty of the dentist is to care for the teeth after they have appeared, so that when he is called in it is too late. It has been stated that three-fourths of the deaths of infants under two and one-half years of age are caused by complications arising from their teeth. These little ones should not be receptacles for drugs, but should receive other attention—plenty of out-door air and sunlight, special massage of the mouth during dentition and a frequent use of the lancet over the points of tension. The mother should be taught to see the importance of nursing her child. Mother's milk is best, good fresh

cow's milk is second. The mother or nurse should frequently rub the ridge with thumb and finger, endeavoring to expand the arch in the direction of natural development.

The cases are, however, most frequently met in the office in children of from three to twelve years of age, and I desire to draw your attention more especially to the modes of practice in these cases.

Children's teeth should be treated in a humane manner. Each case must be understood and a careful and comprehensive diagnosis should be made. After the practitioner has ascertained what is needed in the particular instance he should proceed to gain the confidence of the little patient. Let him proceed slowly, doing one little thing after another, relieving pain when it is possible, until the child looks upon him as a true friend. A soothing manner should be adopted and operations should be performed as quickly as possible. In a short time his patience will receive a full reward, for he will be surprised at the quiet endurance that will be shown, even in painful operations.

We should begin early with the deciduous teeth and aim to keep them constantly under our care. The parents should be instructed to send their children to the family practitioner at least every six months. Except in rare instances deciduous teeth should not be extracted until absorption has been completed and nature has practically thrown them off, or, failing to do so, demands assistance. It is well known that in the alveolar ridge, as in a stone arch, the removal of one part allows the rest to fall in, and that when a tooth has been prematurely extracted there is less room for the eruption of the permanent one in its place. The incoming tooth has to overcome not only this difficulty, but is also deprived of the nourishment it should receive in the decalcification going on about it. The deciduous teeth are not very sensitive until about the fourth year, when decalcification begins, after which the roots have jagged, sharp points which may be the source of trouble. Mothers should be advised of these facts so that they may restrain their children from crushing hard substances in the mouth. Nuts and cheap candies are very injurious in this respect.

Operations should be begun before decalcification sets in if possible, or as soon afterward as the necessity appears. Cavities are more satisfactorily prepared and the operation is accomplished in less time by the use of sharp hand instruments than with the dental

engine. The patient has less dread of the operation, especially if the excavation reaches near the pulp. It is not necessary that the cavities be prepared with as much care as in permanent teeth, since the fillings are to serve but a short time. But the pulp should never be destroyed. The reason is plain, as it is a very difficult matter to remove the dead pulp, and even if absorption has not set in at the time of the operation, it will soon do so and give rise to complications hard to combat. If the pulp is not exposed do not expose it by excavation. Use a germicide on the remaining decay and fill over it. If the pulp is exposed the cavity should be made as clean as possible by thoroughly washing with warm water, drying and wiping out with carbolic acid. If there is but a slight exposure it is well to use a drop of chloro-percha over the exposed point, and to press lightly over this a small pellet of gutta-percha which has been warmed on the heater, filling in above with a thin mixture of cement until the cavity is entirely filled. But if the exposure is larger the pulp should be capped with a mixture composed of two parts of oil of cloves and one part of a preparation of carbolic acid and creosote in equal quantities, the whole being brought to a thick consistency with powdered iodoform. This cap should be pressed into place with pellets of cotton and the excess of the liquid constituents of the mixture should be removed in the same manner. It should then be covered with a thin piece of blotter, or paper from the gold foil book, upon which the filling should be completed with thin cement as formerly.

Much has been said about pulpless deciduous teeth and the modes of treating them. This subject is certainly one which requires most careful study. The conditions as they present themselves are extremely hard to overcome. In the first place such teeth cannot be properly cleansed, and much decayed matter, which may give future trouble, must be left. Then the fact that absorption begins at the root at an early period, enlarging the apex and shortening the root, makes it impossible to fill them with permanent material. Resort must therefore be had to antiseptic dressings. After the roots have been thoroughly cleansed with instruments and warm water they may be filled with powdered iodoform, mixed with campho-phenique, the mixture being well pumped in. Pellets of bibulous paper or cotton should be placed over this dressing and the filling completed with cement or gutta-percha. This mode of treatment

gives but little trouble and obviates the necessity of opening into the pulp cavity from the buccal side, as has been suggested. Very few teeth, less than 5 per cent of them, when treated in this manner, produce after-trouble sufficient to demand that operation.

I here recall a particular case of a patient under three years of age, in which there were eight teeth requiring fillings, and of the eight six were abscessed. I filled these in the manner suggested, and although the operation was performed more than eight months ago I see no signs of further trouble.

Practitioners differ as to the materials to be used, and certainly one ought not to limit himself to any one material. Tin-foil, copper amalgam, gutta-percha and cement are most commonly used. Tin-foil is not used now as much as formerly. Without a doubt it has some value as a tooth preserver, but it is objectionable, as it requires too much time in manipulation and too great a pressure in adapting it to the cavity. I have had little practical experience with copper amalgam and will not speak of it in this connection. Gutta-percha is of value as a non-conductor and in approximal cavities of molars, but it is objectionable because the cavity cannot be kept sufficiently dry and it requires too much pressure in adaptation. In far the greater number of cases cement is preferable to any of these. A tenacious, quick-setting cement has several desirable qualities for this class of cases. It can be mixed thin, it is easily worked, and during its existence it preserves the tooth admirably. It is especially serviceable on the labial and crown surfaces, where there is but little decay, or where the little ones will not permit an excavation.

A word about the second dentition. During this period the child needs careful and continuous attention. This is more especially true if the deciduous teeth have not received proper care, if there have been premature extractions or other abuse. At this period the child is old enough, with some watching, to carry out instructions. It is not generally known by the laity that it is not necessary for the child to lose any teeth before permanent ones are erupted. It is a frequent experience of the practitioner to have parents bring their children complaining of an aching tooth, only to discover that a permanent molar has been permitted to decay beyond repair. They do not know that the jaws have grown during these years and that the child is entitled to twelve more teeth in his permanent set than

he had in his temporary one. The practice of extracting the first molars just when the second ones are erupting is to be condemned, except in extreme cases.

The choice of materials for filling permanent teeth in children is a matter of importance. Gold or other hard fillings should not be used. The patient is generally worn out by the operation and it is seldom satisfactory to the practitioner. Amalgams discolor the teeth and do not aid in building up the structure. It is better to fill with cement and refill when necessary. This is especially valuable in correcting undeveloped molar crowns. After drying the fissures in the surface a thin mixture of cement may be run in and held in place with the finger until it has hardened. The occlusion may be raised in a similar manner when it is necessary to relieve an abscessed tooth.

The nerves in these permanent teeth should be carefully guarded and on no account destroyed until root calcification has been completed.

The subject is a broad one, reaching on the one hand to approved methods of treatment and on the other to the daily habits of the patient. Many deformities are caused during this period against which the dentist should ever strive to warn his people. The bad habits of lip-sucking, mouth-breathing, and thumb and finger sucking, are especially injurious. I have recently seen two cases of grave deformity resulting from the habit of thumb-sucking, for which the mothers were to blame, because they permitted their children to go to sleep in this way. One of these cases was of a man about thirty years of age. He had persisted in the habit until he was quite a large boy and after that, until he was more than twelve years of age, he would unconsciously go to sleep in this manner. When he presented himself to me I found that, although all the teeth were present, none of them except the wisdom tooth, the second molar, and the distal side of the first molar, came into apposition in such a way that he could masticate. The other case is of a boy, about thirteen years of age, and is not so extreme as the first mentioned, although the superior incisors are considerably out of line and the inferior ones have been forced slightly inward. I hope to correct this latter case by regulating, but did not think it would be advisable to undertake the former.

I trust the profession will feel the importance of this subject, and,

though it would require many more pages to do it justice, I leave it, hoping that the varied discussions which may be brought out will be of service to us all.

### THE GUMS.

BY DR. E. M. KETTIG, LOUISVILLE, READ AT THE TWENTY-SIXTH ANNUAL MEETING  
OF THE KENTUCKY STATE DENTAL ASSOCIATION, AT LOUISVILLE,  
JUNE 16-18, 1896.

The motive that prompted the writing of this short paper was brought about by a combination of circumstances, which had often struck me as peculiar, viz., that we, who are always ready to do all in our power for the life and preservation of the dental organs, pay so little attention to the health of the gums. We all know it to be a fact, that we will spend weeks and months in restoring the teeth to a healthy condition, and yet will absolutely neglect the gums, except perhaps to clean the teeth and advise the use of a mouth-wash.

Many of our patients say—"Doctor, my gums are tender and bleed at the slightest touch, and I cannot brush my teeth because my gums bleed so freely," with other like expressions, and then ask what they must do to remedy the trouble. To many of us questions about, and the conditions of, the soft tissues of the mouth, and especially the gums, as a rule do not give very deep concern, and we usually put off our patients with some evasive answer—"That is only temporary, they will get all right again; anyone's gums bleed once in a while." Some of us do not stop to think that upon the general health and hygiene of the oral cavity largely depend the health and usefulness of the dental organs, and that many diseased conditions of the teeth are the direct result of pathological conditions of the surrounding soft tissues.

The word "gums," generally used in the plural by the laity, is a term denoting a certain tissue found only in the mouth, surrounding the teeth and as a covering for the palate and alveolar processes. In no other part of the body do we find similar tissue, and it is distinct and separate, in the sense that the teeth are *sui generis*. With the teeth it is contiguous, while with the mucous membrane of the cheeks and fauces, and membrane about the roots of the teeth, its relationship is one of continuity.

It is not affected by diseases of the teeth directly, but indirectly assumes alarming pathological conditions through the periosteal tissue and irritations residing in the surrounding mucous membranes. Inflammation of the gums is correctly called *ulitis*, but according to our dictionaries it is synonymous with *gingivitis*. The former word is of Greek origin, while *gingivitis* is from the Latin, and when we add the Greek termination *itis* I think we use the word incorrectly. We might compromise the matter by using the word *ulitis* in describing general inflammation of the gums, while *gingivitis* could be confined closely to express the free margins surrounding the teeth. In other words, if there were no teeth in the mouth we could not have a case of *gingivitis*, for there would be no free margins, but it would all be called *ulitis*.

It is not the object of this paper to point out the many pathological conditions of the gums other than to treat of that common complaint of our patients about their gums bleeding. The gums in a healthy condition should be pink in color and not red, as we frequently find them. When sound they will stand much abuse without bleeding and rapidly recover, even from actual injury, without the usual inflammation accompanying the reception of wounds in other soft parts of the body. So far as I am able to judge there are two causes which lead up to the condition mentioned. The first and most important is improper hygiene of the oral cavity. If the teeth were in a thoroughly clean condition the gums in many cases would never be inflamed. The second cause is the too frequent use of certain articles in or with our food. I refer especially to the condiments, such as mustard, salt, pepper, vinegar, etc., and I believe the whole American people season their food too highly. The one article, generally supposed to be harmless and used freely by nearly everyone, and which, in my opinion, has much to do with this form of inflammation, is salt. About the first thing most of us do when about to partake of a meal is to reach for the salt-cellars and liberally sprinkle salt over everything in sight. I fail to see why too much sodium chloride in the blood should not affect the gums, on the same principle that the mercurial combinations produce the condition known as *ptyalism*.

It is well known that in certain seasons of the year, especially in the spring, when we all get that tired feeling, and the blood is undergoing its normal changes to prepare itself for the summer's

heat, the system is in a highly sensitive condition, and mucous surfaces throughout the body are extremely prone to suffer from changes of the weather, producing colds, pneumonia and general inflammation of the air passages and head. Add to this a diet of spring vegetables and acid fruits, and we quickly charge our system with too much acid. I believe that people who are predisposed to gout, rheumatism and local manifestations of pyorrhœa, all suffer more at this time than at any other in the year. Is it not natural then for the gums to show signs of irritation and suffer from this sluggish condition of the circulation?

So far as treatment is concerned, we should clean the teeth thoroughly for the patient, and direct such treatment as will lead to a stimulation of the gums. If my patients tell me their gums bleed when they clean their teeth, I tell them to make them bleed all they can; not only to brush the teeth, but also give the gums a judicious brushing, and thus in a few days the tissues will be hardened and stimulated to a healthy condition. The prevalence to-day of all kinds of soft and pasty foods has much to do, through lack of friction, with causing bleeding of the gums. In the days gone by, when hard food and coarse bread were used, the gums were mechanically stimulated by friction and so did not bleed very often. An astringent mouth-wash, of which there are many, may also be prescribed with advantage.

---

### CASE IN PRACTICE.

BY I. A. FREEMAN, D.D.S., CHICAGO.

The patient, a man about thirty-five years of age, presented himself for consultation. His trouble consisted in, what purported to be from the history gained, an abscessed superior lateral incisor, which from time to time became sore. This was followed by a tumor in the dome of the oral cavity, which continued to increase during periods of varied duration. At length it would disappear, or nearly so, to be followed by the same phenomena, after intervals of three or four months, longer or shorter.

At the time he came under my treatment the tumor was about the size of a large chestnut, and situated about midway between the line of the hard palate and the incisors, filling this

region, being fully three-quarters of an inch in diameter. Upon examination, fluctuation was distinctly manifested, but pulsation could not be detected. Reasoning from this that the tumor was the result of the dead lateral tooth, it was decided to open the sac and evacuate the pus. Proceeding to do this with a narrow curved bistoury, an incision the width of the blade was made. The flow of blood which followed this was so great that it caused a doubt to arise as to the correctness of the diagnosis, and the knife was withdrawn without ripping open the tumor, as was first intended, no pus following the removal. The gush of blood revealed the true nature of the tumor to be that of an aneurism, requiring very different treatment from that of an abscess. It was well that the sac was not laid open, for the hemorrhage was very profuse and difficult to control, with the small incision made. Had the walls of the sac been relieved of the tension caused by the pressure upon them from within, greater difficulty would have resulted.

The treatment in this instance, after using a solution of persulphate of iron, which did not prove a permanent coagulant, was to wipe the entire inner surface of the sac with equal parts of the tincture of iodine and a 95 per cent solution of carbolic acid. This proved a good and sufficient coagulant, which arrested the hemorrhage permanently. A cure resulted, as there has not been a recurrence of the trouble since the treatment, a period of nearly eighteen months.

A word of caution is not out of place here with regard to diagnosis in these cases. Introducing an asperating needle, and drawing away some of the fluid contained in the sac, would usually give true conditions, even if pulsations could not be detected, as was the condition in this case.

---

FROG'S BLOOD.—A tale is told of a recent examination for the L.D.S.—we will not say where—in which one of the microscopic specimens was some frog's blood. Each student upon being shown the specimen described it with such rapidity and accuracy that the suspicions of the examiner were aroused. Feeling sure that an early candidate had informed the others what the specimen was, the examiner changed the slide, substituting some blood drawn from his own finger for that from the frog. The next candidate who presented himself was asked what was under the microscope. "Blood, sir," he replied with assurance. "What blood?" was the query. "It is the blood of a reptile, sir," he answered glibly. What the examiner's feelings were on hearing himself thus described, is not stated.—*Brit. Jour. Dent. Sc.*

## Digests.

---

### *The Therapeutic Gazette for July, 1896.*

“COCAINE AND COCAINISM.” In the *Revue de Therapeutique Medico-Chirurgicale* of March 15, 1896, Sallard contributes a paper with this title, in which, after a brief historical resumé of the influences of this drug upon various portions of the body, he proceeds to discuss the causes and symptoms of acute and chronic cocaine poisoning.

After stating that these untoward symptoms arise from subcutaneous and submucous injection, and from the use of large quantities upon the mucous membranes, particularly the urethra, he reminds us that Reclus, after a careful study, has concluded that on an average three grains of cocaine is the safe limit for anesthetic purposes. He also quotes an experience of Abadie's in which, after the injection of two-thirds of a grain of cocaine into an eyelid before an operation upon ectropion, the patient, aged 71 years, was seized with coma which lasted five hours, death ultimately occurring.

He also quotes an experience of Hugenschmidt, a celebrated dentist of Paris, who had a case of syncope lasting half an hour as the result of injecting ten drops of distilled water into the gum, thus illustrating the fact that injections under mucous membranes are capable of producing symptoms independently of the presence of cocaine. We believe this patient had already suffered from an attack of acute cocaine poisoning as the result of an injection. No case of death, however, has resulted after the absorption of a small amount of cocaine. There is one case, however, of a death from the injection into the urethra of a solution containing eight grains of this drug. The symptoms of acute poisoning under these circumstances are variable; sometimes they are simply those of a brief and fleeting vertigo; in other instances there is great excitation of the nervous system and a tingling in the extremities, with flushing of the skin followed by pallor; in other instances there are gesticulations and the patient passes into a condition of active talkative delirium. The latter symptoms are seen most frequently in women. In other instances the symptoms are those of marked depression. The

vertigo produces nausea or sensations similar to those of sea-sickness. There is marked feebleness and the patients are in a condition of semi-stupor. There may also be palpitation of the heart and some vomiting. There is marked pallor of the face, dilatation of the pupils, coldness of the extremities, and profuse sweating. Should convulsive symptoms come on, the intoxication is of course exceedingly profound and the prognosis grave. Convulsions are at first tonic, then clonic in character, sometimes resembling those of ordinary eclampsia. There is marked dyspnea, probably due to tetanic contractions of the respiratory muscles, and cyanosis is present from similar reasons, the cause of death being failure of respiration. The duration of these untoward symptoms produced by poisoning by cocaine is usually from one to two hours, although of course they may last for a longer period of time. Marked insomnia is very apt to follow these symptoms.

Sallard points out that Gauthier has stated that the administration of nitro-glycerin will greatly diminish any danger connected with the use of cocaine, and that Gluck has claimed that by the use of phenate of cocaine these symptoms can also be avoided.

Goessel has also proclaimed the advantages of tropacocaine as less likely to produce depression of the heart and other untoward symptoms.

Magitot, after stating that only very minute quantities should be used for producing local anesthesia under the skin or mucous membrane, adds that cocaine injections should never be used in neurotic patients or in those suffering from cardiac disease or chronic affections of the respiratory passages. Great care should also be taken that it is not introduced into the veins. The patient who receives cocaine instillations should also always be placed in the horizontal position, save in those instances where in operations upon the mouth or head a semi-reclining or erect position is indispensable. Again, the greatest care should be used that the hydrochlorate of cocaine is absolutely pure and not mixed with other alkaloids which may possess a toxic influence. It is also well to use the instillations gradually rather than to inject them all at once. Magitot believes that cocaine possesses over chloroform and ether incontestable advantages.

Should symptoms of acute intoxication by cocaine develop in any case, the treatment is to place the patient flat on his back and use

slappings of the face and chest with hot and cold towels, ammonia by inhalation, and, if necessary, nitrate of amyl and hypodermic injections of ether and caffeine.

Chouppe has recommended that from one-third to one-half a grain of morphine be given hypodermically.

In regard to chronic intoxication by cocaine, or what has been called cocaino-mania, Sallard tells us that this habit is constantly increasing in France. The symptoms consist of loss of appetite, cardiac palpitation, headache and vertigo, finally followed by hallucinations or delusions. The following treatment is to be instituted:

In the first place, abstinence from cocaine is to be insisted upon under proper control of the attendants or in a hospital. The method of decreasing the cocaine need not be instantaneous, but it should be tapered off rapidly. Hydrotherapeutic measures designed to increase nutrition should be resorted to, and iron, quinine and arsenic, with heart tonics, such as caffeine and sparteine, should be employed. Chloral, trional or sulphonal may be employed to overcome insomnia, and the whole effort of the physician should be directed by means of appropriate exercise and a regular method of life to improving the patient's general nutrition.

*The Ohio Dental Journal for July, 1896.*

"A SAFE AND SERVICEABLE DETACHABLE BRIDGE-DENTURE," by B. J. Cigrand, B.S., D.D.S., Chicago; read at Southwestern Michigan Dental Society, 1896. The time was not long since when every dentist prided himself on the great span of the bridge. He did not consider himself scientific or practical unless he ventured to restore by means of bridge-work an entire upper denture and anchor same on three or four natural teeth, and he felt he was ancient if he produced a vulcanite, aluminum or gold denture. This, fellow-practitioners, was the status of prosthetic work a few years since. Time, that great assayist of all that is good and pure, has so refined and cleansed this department of dental prosthetics that only those who are familiar with the underlying principles of both the art and science can attain success. The days of "wild-cat bridge-work" have been relegated to the past, and only empirics and charlatans are still crying in its behalf. In our profession, as in all organized society, inclusive of governments, the conservative are the "pillar of strength," or the power behind the throne.

Bridge-work has advanced in theory only when it has advanced in practice. In its twofold evolution it absorbs from every available source whatever tends to broaden its art or perfect its science; it calls to its aid anatomy, chemistry, therapeutics, surgery, physiology, pathology, mechanics and sculpture, with each of which it is directly related, and the practitioners who have become most proficient and successful in the application are those who have mastered a full curriculum of dental science.

There will always be those who subscribe themselves among the radical and who are incessantly excusing the old—no matter how serviceable or appropriate—and inviting the recent, regardless of how ineffectual or disastrous.

In the first place, our knowledge of hygienic laws forbids us from recommending the large permanent bridge; secondly, our sad experience in repairing same has led us to a

proper appreciation of the forces of mastication and occlusion, and we have learned that a strong bridge must be firmly anchored, and this latter point is the one which recent experiments and investigation have indelibly engraved upon our knowledge of practice.

The evident advantages of continuous crown-work have stimulated the inventive genius of dental prosthesis to improve the methods and forms of construction and extend its application, thus permitting the versed practitioner to insert on a conservative basis a crowned substitute, which in respect to usefulness, appearance, durability and comfort compares well with nature's master stroke.

Removable bridges are of late receiving much attention, and few matters pertaining to our professional service

deserve greater notice. Of the varied evolution of the detachable bridge-venture I refrain from speaking, as in the description of the one I give you I will occupy some little of your valued time.

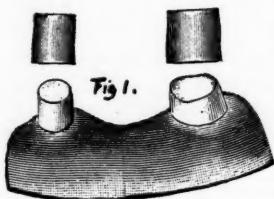
Fig 3.



Fig 2.



Fig 1.



The method I recommend relates to buccal dentures, and since we are most frequently called upon to replace buccal teeth, you will readily recognize the deserved importance attached to this subject.

I have many of these dentures in service and am convinced that from the point of hygiene and comfort they are a decided success.

The buccal cases, to which I refer in particular, are those where the second bicuspid and first molar are missing, in either the upper or lower jaw, and where the adjoining teeth are possibly affected by decay. The method of construction is simple, and there are many cases to which the system is applicable. The case in question, an upper right, Fig. 1—trim down the first bicuspid, and, if necessary, devitalize same, and give it the shape of an ovoid pillar. Then proceed to treat the second molar likewise, shaping it into a cylindrical pillar. Then produce gold telescopes for these prepared pillars and cement them in position. Next construct a gold bicuspid and molar crown having a solid cusp and of such shape as to perfectly envelop the golden pillars. Position these crowns and take an impression and the maxillary antagonism, and proceed to swage a gold saddle connecting the two gold crowns as in Fig. 2. Now solder the saddle to the crowns and proceed to occlude the artificial second bicuspid and first molar (tipping same with gold cusps); wax same into proper position, and, after investing the case in the usual manner, join the entirety with gold solder; finish up as your judgment well directs.

If it is desired to construct the same detachable bridge-denture and employ vulcanite to hold the artificial substitutes, the process of construction is slightly different. In this event the earlier stages of construction are the same as already described, differing only subsequent to attaching the saddle to the two gold crowns. Several platinum pins are anchored in the gold bicuspid and molar crowns, and a bar of silver, acting as a truss, is soldered into a position as will not interfere with the setting up of the plain teeth.

After waxing up the case, flask it and pack pink rubber on the buccal surface and maroon on the palatal; vulcanize and finish as a metallo-vulcanite denture.

The various modifications necessary to adapt this method to individual cases will readily present themselves to the conservative practitioners.

I do not wish to be understood as inferring that the method I

suggest is entirely original, for few inventions are, but I trust you will believe that this process of construction is a decided improvement over the methods in use heretofore. And if I shall have interested you in this mode of dental substitution and awakened a desire to encourage in your practice its application, I feel fully satisfied that my paper has accomplished all that was intended.

"PROGRESSIVE CALCIFICATION," by Junius E. Cravens, D.D.S., Indianapolis; read at Mississippi Valley Dental Society, April, 1896. The irrepressible activity of the dental pulp as a builder should not be overlooked nor undervalued. The philosophy of nature does not require that completed dentine shall be nourished, any more than that enamel shall be similarly favored. When in the process of development dentine has attained a maximum or extent for practical purposes, *regular* activity of the odontoblasts is at an end—all subsequent activity of these elements is secondary and *spasmodic*, regional, responsive only to special excitation induced by irritation of external source. All secondary activity of odontoblasts results only in secondary deposits which always are irregular and erratic in structure; probably the nearest approach to regularity in these is the fact of lamination, which merely shows eras of activity.

The form of secondary calcification most frequently met with is that known as secondary dentine, discoverable to some extent in canals and pulp chambers of most persons beyond maturity. Secondary dentine may be pretty evenly distributed over the walls of a pulp chamber or confined to a particular section of the wall, or appear in form of tumors or nodulations—more or less pedunculated—firmly attached to the cavity wall. The benefits and evils of secondary dentine are about evenly conferred and well mixed, i. e., neither is universal and absolute.

As already suggested, development of secondary dentine is due to specific irritation of external relation; consequently the greater formations occur on those parts of the wall of the pulp cavity nearest to or toward the source of irritation.

Activity of odontoblasts in secondary calcification may be manifested over a considerable portion of the surface of a pulp at once—provided the irritation were general—a condition most likely due to extreme temperatures or probable alternation of them. Whilst the odontoblasts are most actively engaged thus the individual probably

feels no discomfort, and the progress of deposition may be so slow as to require many years before producing noticeable effect; on the contrary, very extensive deposits may occur in a year or less time.

Secondary calcification is usually much more rapid than regular dentinification. Secondary dentine often occupies nearly all the pulp chamber, causing a reduction of the pulp until it merely exists in the canal in the root.

In rare instances nodules of calcific matter are found in the canals; this rarity, probably, is owing to a lowering of vital force in the pulp, thus restricting activity of the odontoblasts. There is another reason why odontoblasts within the root canals do not oftener resume spasmodic activity. They are not subject to external influences to the same extent as those within the crown of the tooth. Naturally a root is protected and may be said to have no external relations other than physiological.

A pulp canal is subject to two constrictions which may be called apical and coronal or cervical. The first constriction to be considered here is the coronal, located at the point at which the pulp enters the canal from the chamber; the coronal constriction doubtless is the secondary one. The coronal or secondary constriction is related to practice in an important degree. Every operator has experienced some difficulty in penetrating certain canals, because of a mass of secondary dentine that is found projected over the entrance to the canal, sometimes almost closing it. The removal of this obstruction often reveals a liberal canal beyond.

The coronal constriction is not due to external cause. It is developed in response to a natural demand to meet an emergency. When the dentine of the crown has attained a maximum thickness for practical purposes of a tooth, such as wear-and-tear and strength, the activity of the odontoblasts must be reduced and finally stopped, and this can be done only by lowering the vitality of the pulp itself, enfeebling but not destroying it. An external irritant of a pulp may be the stimulus of enough irritation of that organ to induce renewed activity of the odontoblasts immediately involved, for a time, but here as elsewhere spasmodic effort receives only spasmodic support; the supply of pabulum (building material) fluctuates with the wavering of the inflammation. Inflammation is high living, and if extreme in a pulp, nutrition fails.

The coronal constriction may be developed so rapidly and exten-

sively as to literally strangle the coronal portion of the pulp, and the dentist discovers a case that has died and given no sign.

But there are other secondary deposits to be observed before reaching the terminus of the canal; pulp nodules are oval or rounded bodies, frequently found in the substance of pulps, and having no connection whatever with the cavity wall or any other masses of secondary matter. Doubtless the same character of irritation that causes development of secondary dentine also stimulates formation of independent nodules, but in the latter the odontoblasts have no part, unless possibly one becoming separated from its associated bodies sinks into the substance of the pulp and becomes a nucleus around which accretion of lime salts occurs, from the superabundance drawn to the pulp by the mild irritation, and which the coronal constriction prevents being promptly returned to the general circulation. The process of nodulation within pulp tissue is analogous to that by which oysters and other bivalves construct pearls.

Nodules within pulp canals are much more rare than those in the coronal portion, nevertheless the writer has discovered several cases, one in particular, in which there were three small oval nodules in the same canal. The study of these nodular formations is certainly very interesting, and may be made profitable at least to the mind of he who studies them. Some specimens, when cut, show beautiful laminations, that mark periods of activity and repose in the process of secondary calcific deposition.

Going back to the pulp chamber, from which we wandered in the search for pearls, let us penetrate the tubuli of dentine for further discoveries of secondary lime deposits. Under stress of certain conditions the pulp fails to invest against encroachment by deposits within its cavity, but instead the embryoplastic filaments within the tubules, that may be affected by an irritant, permit or accomplish transmission of fluid to the peripheral loopings of the tubuli, the transmitted fluid containing the salts of lime in solution, the embryoplastic filaments possessing the power of osmosis. The salts are laid down in the tubules at their terminals first, solidifying them, as close to the irritant as possible; by gradually increasing inward this process results in a final solidification of a section of dentine that thenceforth is insensible, thus protecting the pulp from external irritation; this character of deposit is classed as obstructive calcifi-

cation and is in nearly every essential different from all other calcific deposits or formations in teeth. This obstructive action may be confined to a group of tubules that directly are affected by thermal irritation from a metallic filling, the visible evidences of this special deposit being demonstrated by a section of dentine lying between the cavity of decay and the pulp chamber; the differentiation of color and marked opacity of the solidified tract is easily notable without aid of magnifying apparatus.

Obstructive calcification often is general in a tooth, from some general irritation, and in senile abrasion is nearly always to be observed; thus we are enabled to account for the low sensibility of dentine of most of our aged patients and their non-amenableability to ordinary toothache. A slow abrasion of any character will stimulate obstructive calcification. In all these obstructive measures nature acts solely on the defensive against outside influences, pulp nodules alone being erratic calcification.

There are no pulp dynamics capable of nourishing dentine that has become solidified by obstructive calcification; collateral saturation is insufficient.

Once more penetrating the root canal we discover another interesting differentiation in secondary calcification, known to practitioners as canal casts. From their appearance these differ considerably from other secondary formations and deposits named, although of the same constituency. The casts are formed within the canals, in apparently the same manner as the nodules, but are long, rod-like, and conform closely to the form of the canals in which they appear; this close conformation to the canals has given these deposits the name of *canal casts*. Some canal casts are quite solid, while others appear to be formed of fine crystals like asbestos; while mechanical adaptation sometimes enables a cast to hold tolerably well to the canal wall, they never are really attached. As in cases of pulp nodules the canal casts are independent and erratic formations, in which the odontoblasts have no interest.

It is supposed that the spongy casts are so because of rapid atrophy of the pulp in the canal, and lowering or expiring vitality in it, probably accomplished by cemental constriction of the apical end of the canal.

It is well known, or ought to be, that the apex of a tooth-root is always completed by cementum, if completed at all; and in this

cementum, always growing, we have a continuance of the process that I have called progressive calcification, that began with the appearance of stellate bodies in the enamel organ, and does not end, except in death of the pulp or extraction of the tooth. Even after death of a pulp, progressive development of cementum does not lose significance in its discontinuance, because as abrasion reduces articular value of a tooth, the additional laminations of cementum should be sufficient to maintain articulation, and usually will so long as the pulp remains alive; then we can understand that if there eventuate a failure of cementum development, it may become conspicuous in that failure alone.

The histories of the dental pulp and progressive calcification are written in the same page of events and must be read together, and reading them thus brings us to the following conclusions: (1) Time enough being given, the dental pulp inevitably must destroy itself or be obliterated by influence of progressive calcification. (2) From the stage of practical completion of a tooth the pulp labors toward self-destruction, to suicide by secondary deposition. (3) After practical completion (articulation) of a tooth, its tenure does not depend upon continued vitality of the pulp. (4) While unnecessary destruction of pulps should be discouraged, it is better to attain certainty of good results with pulpless canals than to wrestle with disappointing after-effects of attempted conservation of live pulps, therefore I have declared the following: (5) A pulp that can live without protection should be protected; pulps that cannot survive without protection were better destroyed.

*The British Journal of Dental Science for July, 1896.*

"THE EARLY TREATMENT OF CROWDED MOUTHS," by Mr. J. F. Colyer. Read before the Odontological Association of Great Britain. The first question I wish to lay before you to-night is this: Is it advisable to treat a crowded mouth directly such a condition in the future seems inevitable? Personally I think the earlier the treatment of a crowded mouth is commenced the better; for as time progresses the irregular position of the teeth becomes more fixed and more aggravated, and hence the case is more difficult to treat. But there is, I think, a stronger argument than this, namely, that if room is made for each tooth as it erupts, the case, by the time the succession of teeth is complete, simply resolves itself into the

treatment of either a crowded canine or second bicuspid, whichever tooth happens to erupt last; while, if on the other hand, we leave the treatment of the crowding until the succession of teeth is complete, we shall have to deal with a condition in which probably the whole of the six front teeth are involved, and the correction of which would be long and tedious. Personally I see no argument whatever against treating a crowded mouth directly such a condition is recognized.

The next point worthy of discussion is: What are the relative advantages of treatment by expansion and extraction? In considering this question there are three points which should be clearly kept in mind: (1) The great prevalence of dental caries; (2) the increasing tendency for the teeth to be lost at an early age through chronic periodontal mischief; (3) the fact that in the condition we are called upon to treat, nature is endeavoring to get sixteen teeth in the place where only fourteen, and in some cases twelve, can be accommodated.

Now, these points have the following bearings upon our treatment. They indicate: (1) That the method we adopt should tend, if possible, to reduce the tendency to dental caries; (2) that the movement of the teeth by mechanical methods should be avoided from these points of view—(i) in teeth moved by mechanical means there seems to be a predisposition to chronic periodontal trouble; (ii) all mechanical contrivances are liable to directly or indirectly cause caries of the teeth.

Let us now turn and see how expansion or extraction fulfil these objects. Taking expansion first we find that it does not tend to reduce the liability to caries, for by this method the pressure of the adjacent teeth on one another is if anything increased, and, secondly, expansion is a mechanical method, and the time during which plates have to be worn is somewhat considerable. There is also another point which is too frequently overlooked with expansion, namely, that the room gained is apparent and not real. A tooth when moved by mechanical means moves on its apex in a manner similar to the swing of a pendulum; in expansion we move a large number of teeth at once, forcing them in an outward direction. By this means the upper portion of the teeth, namely, the crowns, are made to occupy a greater arch, but the lower portion remain in practically the same crowded condition, hence the tendency for cases treated by expansion to relapse.

Another great disadvantage of expansion is to be found in the disarrangement of the bite which so frequently results, while in addition the very sloping direction into which the front teeth are often forced is decidedly unsightly.

Turning to extraction we find that (1) room is gained not only for the crowns, but also for the roots of the teeth. (2) The amount of mechanical treatment is lessened, and in many cases abolished. (3) The pressure on the teeth is relieved, and a certain amount of isolation obtained—a condition conducive to the prevention of caries. (4) The bite is less disarranged than with expansion. (5) The teeth invariably assume a better direction. To sum up, it seems that crowded teeth should be treated as far as possible by extraction.

Taking for granted that early interference is called for in the treatment of crowded mouths, the next point I should like to suggest for discussion is this: On what lines should we proceed with cases that come under notice? For simplicity of description I propose to divide this question under two headings. (1) Those cases where the first permanent molars are unsaveable. (2) Those cases where the first permanent molars are capable of being saved.

(1) *Cases where the first permanent molars are unsaveable.*—In these cases I have found good results to follow from a line of treatment somewhat similar to the following: The first permanent molars are filled or treated in the best manner possible, so as to retain them until the second permanent molars have erupted. The crowding of the upper and lower incisors is then relieved by the removal of the four temporary canines. If the teeth erupt the normal way the first and second bicuspids will come into a good position and we shall then have the following condition: the four incisors and the four bicuspids in a regular arch, with a greater or less space existing between the lateral incisor and the first bicuspids, so that the canine erupts just external to the arch; in other words, we shall have to deal with a fairly simple irregularity, namely, a canine high in the arch. To make room for the canines the first permanent molars should be removed directly the second permanent molars are fairly through the gum. A plate to hold back the second molars should then be inserted; this plate is made to cover the palate in such a way that it comes in contact with the palatal surfaces of the incisor teeth, while to the back of it are fixed half-round gold wires

which pass along the anterior surface of the second molars, the plate being quite free of the bicuspids. This form of plate is generally known as the Woodhouse plate and possesses this advantage: it retains the second molars in position, preventing them moving forward, while at the same time it allows the bicuspids to fall back, partly by the action of the bite and partly by the pressure of the canine tooth, so that many cases get quite well without any further mechanical treatment, a point of no small importance.

A line of treatment similar to that I have just indicated will naturally not be applicable to all cases, but it serves, I think, to illustrate the principle which we should adopt.

(2) *Cases where the first permanent molars are capable of being saved.*—This type of case is decidedly more satisfactory to deal with than the preceding. Our treatment should in the first instance be directed to the first permanent molars, these teeth if necessary being filled with fillings as permanent as possible. This accomplished space should be obtained by the removal of the unerupted first bicuspid. The operation consists in removing the deciduous first molar and then the bicuspid, and was first suggested by Mr. Tomes for the treatment of that irregularity of the lateral incisor where the mesial angle is tilted forward and directed toward the median line, and is, as you are aware, extremely difficult to correct if left until the permanent canine has erupted.

If a skull exhibiting this condition be examined it will be noticed that the irregularity of the lateral is produced by the permanent canine pressing on the end of the root of the lateral. To relieve this pressure there is but one method available, namely, to remove the bicuspid and so allow the canine to fall back. It may be argued by some that extraction of the temporary canine would be sufficient to remedy the condition of the lateral, but if a dried specimen be carefully studied it will be noticed that the removal of the temporary canine will not have the desired effect of giving room for the permanent canine.

In the cases, the photographs of which I propose to throw upon the screen, the operation has been performed for the treatment of various types of crowded mouths, and in one instance for the relief of what I considered to be a case of early superior protrusion. Of my nineteen cases I am able to show you twelve to-night; in the other seven I have been unable to retain trace of my patients.

In some of the cases the second bicuspids have not yet erupted, and such cases can hardly be said to be complete, but they are, I think, sufficiently advanced to show the effect of treatment. Before, however, placing these cases on the screen, it may be well to refer to the actual operation. First, an anesthetic should always be given, as the removal of the bicuspid is naturally attended by a good deal of pain, a point of great importance with children.

If we confine our attention to one side of the mouth at a time nitrous oxide is quite sufficient, but if it is desirable to move both bicuspids at one sitting then ether must be administered. The instrument I generally use for the removal of the teeth is a pair of Read's upper stump forceps with rather long blades. The temporary molar is first removed, and in attempting the extraction of the bicuspid the blades should be opened fairly wide; this is worthy of remembrance, for in my first cases I found a decided tendency not to keep them open sufficiently. The external blade, too, should be kept well outwards. It is well to advise the use of an antiseptic mouth-wash after removal, and if the extraction has been difficult the wound should be syringed out several times a day.

(Mr. Colyer then showed, by means of lantern slides, twelve cases in which the treatment by removal of the unerupted bicuspid had been carried out.) In concluding his remarks Mr. Colyer said:

An analysis of these cases will show that whenever the operation has been performed for simple crowding, the result obtained has been good. In one case, although the irregularity of the lateral has been remedied, there seems to be too much room, and it is questionable if the bicuspid should have been removed. In another case the crowding would, I think, have been better treated by the removal of the laterals. In the case showing early signs of superior protrusion, the result is on the whole good, and I think that in this class of irregularity the removal of the bicuspid at an early age is likely to be beneficial. Generally speaking, the form of treatment is a valuable one, and as time gives us experience we shall be better able to choose in what cases it can be best adopted.

"*ORAL SURGERY*," by Edmund W. Roughton, B.S., M.D. (Lond.), F.R.C.S. Eng. Parasitic Affections of the Mouth. Animal parasites have been observed in the mouth; cases of *echinococcus*, *cysticercus*, *trichina spiralis* and *dracunculus* (guinea-worm) have

been recorded, but they are so rare that it is only necessary to refer to them in passing.

The vegetable parasites are infinitely more common and important. It is well known that every mouth, whether healthy or diseased, contains an enormous number of bacteria, and that the fur on the tongue is composed almost entirely of minute vegetable organisms. It is also admitted that most of the inflammatory affections of the mouth already described are to a very great extent due to the action of micro-organisms.

But there are certain other conditions in which the growth of a vegetable parasite constitutes in itself the chief morbid feature apart from any effect it produces on the tissues of the mouth. These conditions will now be described.

*Thrush.* Thrush occurs most commonly in children who are brought up by hand, but it is sometimes met with in adults who are prostrated by serious diseases, such as typhoid fever, pneumonia, etc.

In children the disease is ushered in with general malaise which lasts a few hours or days; the mucous membrane of the mouth becomes redder than usual, and in a short time small white patches appear on the lips, cheeks and tongue, and, sometimes, on the gums. They are circular and at first discrete, looking like pieces of curd, but as they increase in size they coalesce, forming a continuous layer extending sometimes over the whole tongue, lips, cheeks, palate and tonsils. The disease may extend to the pharynx and oesophagus, but does not involve the larynx or trachea. At first the patches adhere closely to the mucous membrane, and can be detached only with difficulty, leaving uncovered deep red areas which bleed readily. After a day or two they become drier, of a yellower color and more readily detachable. Finally they assume a brownish tint and fall off spontaneously.

During the formation and extension of the patches the child feels ill; it refuses the bottle or the breast; the bowels are usually relaxed, the stools being green and offensive. The arms and buttocks become red and excoriated and patches resembling those in the mouth may form; they are due not to direct spread of the disease through the whole alimentary canal, but to inoculation of the sore places with spores contained in the faeces.

The course which the disease runs, and the severity of its effects upon the patient, depend upon the conditions by which the child is

surrounded. In private practice the disease is comparatively trivial, whereas in founding hospitals (especially in former times when the importance of cleanliness was underestimated) the disease has been attended with a high mortality, the children becoming exhausted by enteritis and continual diarrhoea.

A microscopic examination of the white patches shows them to be composed almost entirely of a fungus known as the *saccharomyces albicans* or *thrush fungus*. This organism was formerly known as *oidium albicans*, but recent experiments have shown that it is a bud-fungus, not a mold-fungus. The thrush-fungus consists of cells of various shapes, some being elongated and cylindrical, others oval or spherical, these latter being more abundant on the surface of the membrane; in the deeper parts of the membrane and in the epithelium the cells elongate into thick mycelial threads. The fungus attacks chiefly stratified epithelium; it very seldom attacks mucous membranes covered with cylindrical epithelium.

The fungus may gain access to the mouth in several ways. It may be inspired, it may be directly inoculated from the vagina during parturition, or it may be taken in with the food, especially with milk which has undergone partial fermentation. The disease very rarely occurs in children brought up at the breast with ordinary cleanliness.

The *treatment* of thrush is simple and effectual when the child is surrounded by proper hygienic conditions, but under other circumstances is difficult and unsatisfactory. All vessels and implements used for containing milk, or for feeding the child, must be thoroughly cleansed as soon as they have been used. The milk must be quite fresh and should be sterilized before use. If possible the child should be put to the breast of a healthy nurse. The patches of membrane should be detached with a soft rag dipped in weak Condy's fluid. Borax may be used, but without the addition of syrup, as the latter aids the development of the fungus. In severe cases a weak solution of nitrate of silver (two grains to the ounce of distilled water) may be used to paint the patches twice a day, borax being frequently used in the intervals.

*Nigrities or Black Tongue.* In this condition a black patch forms on the dorsum of the tongue and slowly spreads. After lasting some time (a few weeks or months) it may disappear spontaneously.

It is due to the growth of a parasite (*Glossophyton*) probably closely allied as *Aspergillus nigricans*.

The affection does not give rise to any symptoms beyond a feeling of dryness in the mouth. It is usually discovered accidentally.

It should be treated by suitable antiparasitic remedies.

*Pharyngomykosis benigna.* This condition consists in the development of soft white spots or tubercles on the base of the tongue near the epiglottis, sometimes on the tonsils and pillars of the fauces. The spots consist of masses of leptothrix buccalis and other organisms.

They disappear spontaneously. No special treatment is necessary.

*Stomatomykosis Sarcinæ.* This condition occurs in wasting diseases, such as phthisis or protracted typhoid. It consists in the development of hoar-frost-like membranes on the tongue and soft palate, consisting of sarcinæ. It is very rare and does not call for special attention.

**DISEASES OF THE TONGUE.** In this section no attempt will be made to give a complete account of the diseases of the tongue. Only those conditions which are of interest and importance to the dental surgeon will be considered.

*Ulcers of the Tongue.* The tongue is subject to ulceration from many causes, some local, some constitutional. The frequency of ulceration of the tongue is to a great extent due to the soft structure of its mucous covering and to the many sources of irritation to which it is exposed. The various ulcers of the tongue are best classified according to their cause.

*Simple Ulcers.* Under this heading are usually included those ulcers which cannot be ascribed to any definite or clearly ascertainable cause; they are probably due to slight injury or irritation which has passed unnoticed. The best example of this class is seen in cases of chronic superficial glossitis where the surface of the tongue is divested of papillæ and covered by a thin bluish-white pellicle broken up into small areas by lines and fissures. In such cases ulcers are common on the center of the tongue, being due to sloughing of a small piece of the mucous membrane in the course of an acute attack of inflammation in the seat of old chronic inflammation or scar tissue. The ulcer thus produced soon assumes a chronic character having a smooth, red, glazed surface,

callous edges and an irregular or stellate outline. It often causes much pain, especially on taking hot food, and is a source of great inconvenience.

The treatment of these ulcers is difficult and unsatisfactory; they may be got to heal, but they have no sooner healed than they break out again, either in the same place or in another part of the tongue. All sources of irritation must be avoided; the food should be plain, soft and unirritating; alcohol and tobacco must be given up. Various local remedies may be tried in succession until the most suitable is discovered. Chromic acid solution (ten grains to the ounce) chlorate of potash gargle, honey and borax, and solution of tannic acid, or alum may be tried in turn. Nitrate of silver is often used, but it is seldom serviceable, indeed often harmful, especially when used in strong solutions.

*Dyspeptic Ulcers* usually occur on the tip of the tongue, but may extend some distance back toward the center. In some cases the tip and adjacent portion of the dorsum are red and raw, the condition being one of excoriation rather than actual ulceration; the filiform papillæ are absent, the fungiform papillæ looking larger than natural. Behind the excoriated area the tongue is thickly furred. In other cases definite ulcers result from the breaking of vesicles or pustules situated about the tip of the tongue. When they break they leave small, circular, well-defined ulcers with sharp-cut edges, varying in size from a pin's head to a split pea; their surface may be clean and red, or covered with a thin slough. They are very tender, and, as they are almost constantly in contact with the teeth, they occasion a good deal of pain and inconvenience. The treatment is in most cases limited to the administration of an aperient; they usually heal in a few days. If they are more obstinate or show a tendency to recur, the diet must be regulated, the bowels kept open, and the ulcers painted with chromic acid solution, or rinsed with chlorate of potash gargle.

*Aphthous Ulcers* occur particularly in children between the ages of six months and three years, often as a sequela of measles or scarlet fever. (See *Aphthous Stomatitis*.)

*Traumatic Ulcers* may follow a wound produced by the teeth or by any other cause, they usually heal readily and require no special treatment beyond cleanliness. The most important ulcer of this class is the *dental ulcer*. It is due to the continued rubbing and irri-

tation of a rough or carious tooth, or of a badly-fitting denture. It is always seen on the tip or edge of the tongue, never on the dorsum; it may vary much in character, being sometimes a mere crack or excoriation, at others a definite ulcer perhaps an inch in length. In the more acute cases the surface of the ulcer is covered with a shreddy slough, the edges are sharply cut and irregular as if eaten out, and the surrounding area is swollen, sodden and thickly furred. There is much pain, especially when the tongue is moved, the saliva is increased and the breath offensive. In more chronic cases there is not so much swelling around the ulcer, the edges are not so sharply cut, the surface is free from slough, and the subjective symptoms are much less intense, but the tissue upon which the ulcer rests is apt to become indurated, often to a considerable extent.

The *diagnosis* of the acute form of dental ulcer is not as a rule difficult. The rapid formation of the ulcer, the sloughy nature of its surface, the sodden condition of the surrounding parts, and the situation of the ulcer opposite a ragged tooth suffice to distinguish it from other ulcers. The diagnosis of the chronic form is much more difficult; it may be confounded with a primary syphilitic chancre, a gummatous, tubercular, or cancerous ulcer. The recognition of the primary syphilitic sore is fairly easy when it is suspected, but its extreme rarity renders it liable to be overlooked. A gummatous ulcer may usually be distinguished by its larger size, greater induration, deeper and fouler surface, and by the presence of other gummata and associated signs of past or present syphilis on the tongue or elsewhere. A tubercular ulcer may be distinguished by its greater depth, absence of induration and the presence of tubercles in the surrounding parts of the tongue, and of tubercular lesions of the lungs or larynx. The most difficult and important point in diagnosis is to distinguish between a chronic dental ulcer and the early stage of cancer of the tongue, and the difficulty is increased by the fact that a chronic dental ulcer may become cancerous, so that there is a period of transition in which a decided diagnosis is impossible. There are, however, certain points, a consideration of which will materially assist the diagnosis. They are the age and sex of the patient, the presence or absence of induration, and the microscopic characters of a scraping from the surface of the ulcer. Cancer of the tongue is extremely rare under thirty, therefore in a person below that age the question of diagnosis

between chronic dental ulcer and cancer can be easily settled. Unfortunately it is in older persons that the difficulty in diagnosis arises, and here age does not help. Cancer of the tongue is much more common in men than in women, but this fact is not of much assistance in deciding upon an individual case. The absence of induration may be considered to negative the diagnosis of cancer, but its presence may be due to either condition. If a scraping from a cancerous ulcer be examined under the microscope a large number of epithelial cells will be seen; they differ from those observed in health or from the surface of a simple ulcer; they vary greatly in size and shape; some are flattened scales, others rounded, oval, elongated with tapering ends, or flask-shaped; there are usually three or more large nuclei containing nucleoli as large as the nuclei of normal epithelium; sometimes typical cell-nests are discovered.

To sum up, it may be considered a safe, practical rule to regard every chronic, indurated ulcer of the tongue, in a person over forty years of age, as cancerous or likely to become so unless efficiently treated.

The treatment consists in removing the source of irritation; rough teeth should be smoothed down, carious ones filled or extracted, and artificial dentures "relieved" or laid aside for a time. If the ulcer is unhealthy and sloughy, and the tongue much furred, a brisk purge should be given and the mouth frequently rinsed with chlorate of potash gargle. In chronic cases, if the ulcer does not quickly heal after removal of the source of irritation, or if there be any suspicion that it is becoming malignant, it should be excised, and with it an area of a quarter of an inch of healthy tissue.

*Mercurial Ulcers.* Ulcers may form on the tongue during the course of mercurial stomatitis. They are usually shallow and irregular in shape and surrounded by a red areola. They are the result of sloughing of the mucous membrane, and usually portions of slough are seen covering the ulcers partly or completely.

"WHAT IS A PROFESSION?" by W. H. Waite, L.D.S.I., D.D.S., Phil. What are the distinctive characteristics of a profession? Wherein does it differ from a trade? A very simple suggestion may help us. In a trade transaction the public seek an article; in professional matters the public seek an individual. In trade the public can examine the article, estimate its value and decide for or against

it beforehand, whereas in a profession the public must confide in the individual, having only for its guidance the reputation and experience of the individual. In trade the individual is of small consequence, provided the article is genuine; but in a profession the individual is of the first importance—his knowledge, his skill, his character count for everything. In trade, finally, the public can be equally well served at any respectable establishment—the demand and the supply are for the most part uniform. In the professions there is infinite variety; identity is well nigh impossible, either in the matter requiring attention or in the individuals whose services are sought. The enumeration of these points is not arbitrary or artificial. There is no obscure or secondary purpose. We are striving after an answer to the query, What is a profession? All manner of unfair and grotesque inferences have been drawn from the facts just recited; but we have nothing to do with any conclusions save those which may elucidate the exact position of the professional man. Why is he called professional? Because he professes to understand, and he professes to be able to perform the duties pertaining to his specialty. He has no goods to exhibit for inspection or competition when he enters the arena, but he has to show that he possesses the knowledge, the skill and the character he professes. He must be taken very largely on trust, but when once he has demonstrated his capability his position is as well assured as anything mortal can be.

Assuming this definition to be just, let us proceed to inquire how far the practice of dental surgery comes within the limits laid down? Already we have admitted three essentials, viz: knowledge, skill, character. Our first postulate, therefore, is that dental practice demands an amount of knowledge not less important than that required in any other profession; intimate knowledge and general knowledge. Intimate knowledge of all the tissues found in the oral cavity and its associate parts; much of this is microscopical, and only to be obtained by considerable labor. Intimate knowledge of the process of development, together with the irregularities probable or possible. Intimate knowledge of the normal or abnormal conditions, morbid and pathological changes, to which these parts are liable. Intimate knowledge of the manifold methods of treatment, including a thorough acquaintance with the chemistry of the oral fluids, and the medicaments and materials employed. Intimate knowledge of the subject of anesthesia and the mode of administering various

anesthetics. Intimate knowledge of the multifarious instruments, appliances, etc., by help of which operative dentistry has risen to the rank of a fine art. And last, yet certainly not least, intimate knowledge of mechanics, particularly the mechanical action of the facial muscles, and the judicious construction of artificial substitutes. This intimate knowledge is indispensable to intelligent and successful practice; without it a man may practice, but he cannot hold place among professional men. Again, general knowledge is required; structural and functional anatomy, physiology, digestion, circulation, nutrition. General knowledge of those obscure nervous disorders which often involve dental suffering, but for which the dental organs are not wholly responsible; general knowledge of malignant and other growths liable to occur about the head and neck, and all and sundry diseases with which the dental organs may become complicated; general knowledge of chemistry, *materia medica*, metallurgy, etc.; in short, the scope of general knowledge cannot be defined. It will be observed we are confining our attention to professional knowledge. Intellectual culture need not be insisted on here; it goes without saying, the more a man has of it the better for him in any case. Now the question arises, What guarantee can the public obtain as to the knowledge of a dental practitioner? Much every way. By the provisions of the Dentists' act, no man can call himself dentist, dental surgeon, or the like, unless he is registered under the act; also, no man can now be registered until he has passed through a curriculum embracing all the subjects we have recited, and stood the test of a thorough examination by one of the licensing bodies.

*Dental Practitioner and Advertiser for July, 1896.*

"ARTIFICIAL DENTURES," Editorial. Young practitioners in dentistry are always exceedingly anxious concerning the fit or adaptation of their first artificial dentures, and when they do not prove to be satisfactory and are too easily displaced in practical use, the failure is ascribed to a lack of adaptation, another impression is taken and the plates remade. We have in previous numbers of this journal called attention to the great probability that the lack of success in many cases is due to mal-occlusion rather than to a poor fit. An upper plate is inserted in a mouth in which there are but the anterior lower teeth. No special provisions are made to secure a

direct occlusion, but the natural lower teeth are made to close against the lingual side of the artificial teeth, or the sloping surface of the plate. Of course such an inclined plane must force the denture forward until adhesion is lost, when it falls in the mouth.

If there are natural bicuspids and molars below, the artificial teeth may be so adjusted that they slide upon some projecting point, or the inclined surface of a natural tooth, and any force that is then used in mastication has the natural tendency to drive the denture out of its place, either posteriorly or anteriorly. Perhaps there is an inclined plane upon both sides, and the plate with a direct adhesive force of five or six pounds is expected to retain its place against an oblique energy of thirty or forty pounds.

Every dentist knows that in the natural denture no tooth falls into line exactly opposite another, but rather "breaks joints" with it, the first lower pre-molar shutting between the upper cupid and the first upper pre-molar, this arrangement being preserved throughout. Each tooth in that case is prevented from sliding upon its antagonist, and is firmly held without effort. If cuspids or premolars were to occlude point to point, there would not be force enough in the jaws to prevent them from sliding either one way or the other. Therefore, in arranging artificial teeth, especial care should be taken to see that there are no inclined planes of occlusion, or if one is found to be unavoidable, another in the opposite direction should be arranged to counteract it.

An artificial tooth should never be arranged to bite directly upon another. That is, their vertical axes should never be in line. Perfect occlusion is impossible when this is the case, and their occluding surfaces must either be ground down flat or they will slide forward or backward. Each tooth must bite upon two opposite ones. The cusps are so fashioned that they naturally fall into place between the opposite teeth and thus interlock in a manner that prevents sliding when they are in contact.

Sometimes it is difficult to arrange this when artificial teeth occlude with natural ones, but it can always be secured, either by changing the arch of the artificial teeth, by leaving a space between them, or by carrying the center a little to one side. Of course when gum section teeth are used the spaces between them cannot be changed at will, and that is why good mastication cannot be as well secured with them as with single plain teeth. But the arch

or center can be so changed as to make occlusion comparatively good.

Another reason why artificial dentures are sometimes failures is that the parts representing the alveolus present to the muscles a convex instead of a plain or concave surface. When the lip must fall over a rounded contour the natural tendency of both the longitudinal and transverse fibers of the orbicularis oris muscle, and those of the others which blend with it, is to force the plate down. Let the surface of the plate that is under the lip be flat, the upper border not being filed or ground down to a knife edge.

The same rule should be followed in shaping the surfaces against which the lateral borders of the tongue rest. They should even be concave, that the tongue may lie easily in the space and assist in holding the denture in place. Much of the difficulty in speaking that sometimes follows the insertion of artificial teeth is due to the unnecessary thickness of the plate at the points representing the lingual alveolus over the roots of the pre-molars and molars. In making rubber plates too much material is used where it is not needed for strength, and the plate is thus rendered heavy, clumsy, inartistic and difficult of retention.

Many dentists, especially those who are young in practice, wax their rubber cases too far toward the points of plain teeth. Those that are just about long enough to reach to the alveolar ridge should be selected, and then upon their labial aspect they should be waxed only high enough barely to engage their external base. It is much easier to finish them, they look far more artistic, and they are lighter. The incisive and canine fossæ should be well marked to afford a proper lodging place for the decussating fibers of the buccinator and for the longitudinal fibers of the levator muscles. The margin in these regions must be cut down, while the canine eminence is marked by carrying it higher in that locality. When these rules are observed the plate will not only be more artistic in appearance, but it will be retained in position much more easily.

*The Pacific Stomatological Gazette for July, 1896.*

"ALUMINIZED GUTTA-PERCHA," by F. W. Bliss, D.D.S., Santa Cruz, Cal. Read before the California State Dental Association, June 9, 1896. Gutta-Percha is the dried milky juice of an evergreen tree, which grows most abundantly on the Malay peninsula

and the surrounding islands. The method used by the natives to obtain it is a very destructive one. The largest and finest trees are selected and cut down, the bark removed and the juice run into receptacles prepared to receive it. The juice is dried and kneaded into cakes of oblong shape for exportation. The cakes are from five to ten pounds in weight, full of irregular holes, elongated in the direction in which the mass was kneaded, and are of a light reddish-brown color. The cakes, when cut, have a cork-like appearance and a peculiar cheese-like odor.

Dr. William Montgomery, of the Indian Medical Service, was the first to introduce it into general use, and its adaptation to a great variety of purposes soon created an extensive demand for it.

The gutta-percha of commerce contains many impurities. These being eliminated, it is rendered fit for use by the following process: The lumps are first sliced into very thin shavings; these are then placed in a tearing machine, which reduces it to minute fragments, which, falling into vats of hot water, are by agitation washed free from all impurities. The fragments of purified gutta-percha are collected and kneaded into masses. These are then passed several times between heated rollers, which press out the air and water, rendering the mass of uniform texture. It is then rolled into sheets of the required thickness.

Gutta-percha is soluble in benzine, chloroform and bisulphide of carbon, and insoluble in water, and only partially soluble in ether and alcohol. In combination with caoutchouc and sulphur, or certain sulphides, it is readily vulcanizable, for, if this combination be heated to 260° or 300° Fahrenheit, the gutta-percha undergoes a change similar to that which occurs during the familiar vulcanization of rubber.

Pure gutta-percha would not answer the requirements of the dental practitioner as a filling material, but must be made harder by incorporating oxide and sulphide of zinc and other materials; thus we get an admixture that works easily, resists mastication and is kind to the nerve and tooth structure.

For several years I have used the pink gutta-percha that comes in sheets, and the results are very satisfactory. But the color and the difficulty in manipulation is decidedly against it as a filling material. For this reason I commenced a series of experiments, the results of which I will give. My first experiments not being very

successful, I did not deem them of sufficient importance to record. The combination of silex, oxide of zinc and gutta-percha was found to be good to resist mastication; but the silex, being so gritty, the burnisher left a black mark on the surface of the filling. Many other combinations were tried, but did not meet with satisfactory results until I tried the combination of

White gutta-percha. . . . . eight parts.  
Aluminum filings. . . . . five parts.  
Oxide of zinc . . . . . one part.  
Whiting. . . . . one-half part.

This admixture I have been very much pleased with, and have named it "aluminized gutta-percha." It is easily manipulated, and holds its position in the cavity when firmly packed. I have not noticed any bulging, which is so common in the pink gutta-percha. In testing for the conducting of the thermal changes, I took two thermometers that registered the same. I covered one bulb with gutta-percha, and the other with aluminized gutta-percha, being careful to have the material of equal thickness over each bulb. I then plunged both bulbs at the same instant into warm water, and then into cold water, and found the mercury in each changed nearly alike, with a slight difference in favor of the gutta-percha, showing that the addition of the aluminum filings does not materially increase the conducting quality of the new filling material.

I am not going to give much praise to the new admixture, but I believe it will take a prominent place in every dental list of filling materials. It works very easily; it resists mastication much better than other gutta-percha combinations, and is kind to the tooth.

If there is any one filling material to which I would pay special tribute, it is gutta-percha; for, although so often poorly manipulated, and consequently abused as unsatisfactory, it will in certain difficult cases, if properly used, render a better service in the preservation of the teeth than any other filling material.

*Zahnärztliche Rundschau for July, 1896.*

"DENTISTS IN THE ARMY," by Dr. Otto Grunert, of Berlin; translation by Dr. B. J. Cigrand. The specialist, Dr. O. Weber, in his writing on "Accidents and Surgical Cases of the Face," speaks very favorably relative to the success of treatment of bullet wounds of the face, when under proper care. Even when the wound has

been caused by a close range shot, as in cases of attempted suicide, immediate healing sets in when aided by dental science. Dr. George Otis, in his report of surgical cases treated in the army of United States (Circular No. 3, War Dept., Washington, D. C., 1865-71), quotes the enormous figure of 3,312 cases of shot wounds in the face, of which number 135 were maxillary injuries; and he further declares that these wounds, especially those of the superior maxilla, heal readily when under the treatment of specialists. And on page 392 he asserts that qualified dentists should be consulted in cases requiring restoration of the dental functions. In conclusion he says, page 524, that the wounds of the mouth and adjacent parts often suffer permanent soreness and even chronic disease, not infrequently resulting in the loss of the teeth, when, if under the care of dental surgeons, proper restoration might be effected by means of obturators or dental substitutes which would prove both a comfort and a service.

Of our late wars, 1866-71, few official reports relative to patients or invalids are in existence, and just such cases as we dentists could have in charge constitute a large portion of the cases.

Surgeon-General Barthold in his work (*Militaeraerztlichen Zeitschrift*, 1872) relates in Vol. 10, page 456, an account of the Tenth Prussian army corps: "Of 1,804 invalids, 27 were superior and 30 inferior maxillary gunshot wounds." Mr. Massakowski in a German journal (*Zeitschrift fuer Chirurgie*, Vol. 1, page 325) says that during the Franco-Prussian war he had the opportunity while at Basel to inquire into the cases of a French division, and found that of the 1,415 cases, 9 were wounds of the upper and 3 of the lower jaw.

Surgeon-General Loeffler of the German army (Loeffler's Report, page 125) states that he treated 19 upper and 31 lower maxillary wounds among 3,588 patients. Dr. Beck in his work (*Surgery of Gunshot Wounds*, pages 440-443) states that of 4,344 shot wounds, 21 were upper and 31 lower jaw injuries.

The loss of teeth through shot wounds is not included in the foregoing statistics; however, such accidents are quite frequent. While in the war of 1866-71 I saw numerous accidents which entailed the dental organs direct, and shall, at a later period, compile from my war diary a report and submit it to the profession. Unfortunately the material of this theme is greatly scattered. In our gen-

eral literature we find but little on the subject; the greater portion of it can only be gleaned from dental journals, and much can be gotten from the writings of Dr. Otis, of the American army. Among the dentists of Germany who have contributed to the literature of this subject are Drs. Suersen, Haun and Hartung, all of which can be found in the *German Quarterly Dental Journal*; but there are many cases which were given private treatment, and of these we are anxious to learn. I am of the opinion that if dentists, even in times of peace, were appointed to examine and care for the teeth of soldiers, it would soon become recognized that great good would result. And I deem it advisable and recommend that in times of war eminent dentists be appointed on the military staff to attend to such cases as fall under our special domain.

*Journal of American Medical Association for July, 1896.*

“DENTISTS CANNOT PRESCRIBE WHISKY FOR ‘TOOTHACHE’.” On a Sunday of last year a resident of Hendersonville, N. C., had an aching tooth and went to a dental surgeon, licensed by the State Dental Association, and asked him for a prescription for whisky. The doctor examined the tooth and told the man that he would give him a prescription for half a pint, but, on the man’s insistence, he finally gave him a pint. The sequel of this was the indictment and conviction of the person who filled the prescription for selling liquor on Sunday illegally. Appeal was taken to the Supreme Court of North Carolina. April 21, 1896, it rendered its decision of “No error.” All turned on whether a dentist is a physician or not within the meaning of a statute prohibiting the sale of liquor on Sunday unless prescribed by a “physician.” The court quotes the definition in Webster’s Dictionary: “A physician is one authorized to prescribe remedies for and treat diseases; a doctor of medicine.” A dentist, or dental surgeon, it says, is one who performs manual or mechanical operations to preserve teeth, to cleanse, extract, insert or repair them. The statutes of North Carolina recognize that dentists are not included in the term “physician,” by providing separate enactments for each.

If dentists came within the term “physician,” as used in the statute above mentioned, the court goes on to say that “toothache” would become more alarmingly prevalent than “snake bite,” and that it would with usage become more dangerous, it says, is evident

from the fact that the very first dental surgeon's prescription for toothache coming before the court is for "one pint of whisky." The size of the tooth was not given, nor whether it was a molar, incisor, eye tooth or wisdom tooth, and yet the court takes judicial cognizance that there are thirty-two teeth in a full set, each of which might ache on a Sunday. The duties of a dentist are limited, is the conclusion, to the "manual or mechanical operations" on the teeth. Whenever the use of liquor is necessary, it being a remedy to act on the body, and only indirectly in any case for the teeth, within the purview of the statute, it must be prescribed by a "physician" to authorize a sale on Sunday under such a statute.

*The International Dental Journal for July, 1896.*

"**LORETIN, THE NEW ANTISEPTIC**," by S. Eldred Gilbert, D.D.S., Philadelphia. The advantage of iodine preparations in antiseptic surgery have been firmly established, and that of iodoform has become the one most generally used, but with all of its good qualities there are several that are not so desirable. The disadvantages of its odor, toxic and irritant characters, greatly limit its use, and a new iodine preparation has long been desired and sought which shall be free from odor and absolutely non-poisonous. Loretin supplies this want. It has a complex constitution, being systematically called meta-iodo-ortho-oxyquinolin-ana-sulphonic acid and represented by the formula  $C_8H_4IN.OH.SO_3H$ . "Loretin is a bright yellow-colored crystalline powder not unlike iodoform in appearance. It is slightly soluble in water (about two parts in one thousand) and alcohol. It is practically insoluble in ether and in oils, but forms emulsions with oily liquids, and collodion, a soluble form of loretin, is also prepared. Being an acid it forms neutral salts with alkalies, which are easily soluble in water, forming solutions of an orange-red color. The calcium salt is insoluble in water, and can be easily precipitated on gauze impregnated with a solution of sodium salt by dipping into a solution of calcium chloride. Loretin gauze possesses the bright red color of this calcium salt." It may be employed as loretin powder, either alone or mixed in different proportions, with suitable materials, as calcined magnesia, French chalk, starch, etc.

Loretin colodion, in two to ten per cent emulsions.

Loretin pencils of cocoa butter, containing five to ten per cent.

Loretin ointment, five to ten per cent, with vaseline or lanolin.

Loretin solution, containing 0.1 to 0.2 per cent of free acid or one to two per cent or more of the soluble sodium.

Loretin gauze impregnated with precipitated calcium salt.

Its non-toxic property has been fully established by Professor Claus and Dr. Ammelburg by careful experiment, and borne out by clinical experience. Professor Schinzinger says he has employed loretin with great success in the treatment of boils, burns, lacerated wounds, poisoned cuts, and in gynaecological practice; also in many major surgical operations. In none of these was there a single instance of toxic effect.

In purulent discharges it quickly removes the offensive odor. Professor Schinzinger considers no praise too high for the anti-eczematous powers of loretin. He says that generally, when he has been called as consulting physician and prescribed loretin, eczema disappeared where it had resisted all other treatment and which every proposed remedy had increased. Its favorable action, he says, was distinctly developed in one case recently under treatment. "Following a slight phlegmon on the elbow, treated with carbolic acid, an extremely painful eczema spread over the whole of the forearm and up to the shoulder. After different medicaments had been tried without success and the eczema had been considerably heightened by carbolic-zinc plaster, it completely disappeared in a short time under loretin treatment." In its uses Ammelburg says that he has never been able to find albumen, blood, sugar, or iodine in the urine. The absence of the latter is especially corroborated by Professor Albrecht. Before passing to the bacteriological proofs of this disinfectant, I wish to say that for the following tables I am indebted to Dr. B. Korff.

"To each twenty cubic centimetres of disinfectant three drops of pure bacteria cultivation was added, or of pus, and allowed to remain with occasional shaking for twenty minutes; then from each mixture four test-tubes containing sterilized broth gelatin were inoculated, to the first tube 1 c.c. of the infected disinfectant, to the second and third  $\frac{1}{2}$  c.c. each, and to the fourth  $\frac{1}{4}$  c.c. being added. They were well mixed and then poured out on cultivation plates."

TABLE I: *Pure Cholera Cultivation*.—Meta-cresol, two per cent: no growth. Carbolic acid (phenol. absol.), two per cent: no growth. Lysol, two per cent: no growth. Loretin, two per cent: no growth. Loretin, two per mille: no growth. Iodoform, two per

cent: upon all four plates, scattered colonies. Control, numerous colonies.

TABLE II: *Pure Staphylococcus Pyogenes Aureus Cultivation*.—Meta-cresol, two per cent: no growth. Carbolic acid, two per cent: no growth. Lysol, two per cent: no growth. Loretin, two per cent: no growth. Loretin, two per mille: no growth. Iodoform, two per cent: isolated colonies. Control, numerous colonies.

TABLE III: *Anthrax, Anthrax Broth*.—Meta-cresol, two per cent: no growth. Carbolic acid, two per cent: no growth. Lysol, two per cent: no growth. Loretin, two per cent: no growth. Loretin-sodium, one per cent: no growth. Iodoform, two per cent: isolated colonies. Control, numerous colonies. In this series a one per cent aqueous solution of loretin-sodium was tried instead of a two per mille aqueous solution of loretin.

TABLE IV: *Pure Bacterium Coli Cultivation*.—Meta-cresol, two per cent: no growth. Carbolic acid, two per cent: no growth. Lysol, two per cent: no growth. Loretin, two per cent: no growth. Loretin, two per mille, on all plates: numerous colonies; about half as many as with iodoform. Iodoform, two per cent, on all plates: numerous colonies. Control, innumerable colonies.

TABLE V: *Pure Typhus Cultivation*.—Meta-cresol, two per cent: no growth. Carbolic acid, two per cent: no growth. Lysol, two per cent: no growth. Loretin, two per cent: no growth. Loretin-sodium, one per cent: no growth. Iodoform, two per cent: no growth. Control, numerous colonies.

TABLE VI: *Pure Streptococcus Cultivation*.—Meta-cresol, two per cent: no growth. Carbolic acid, two per cent: no growth. Lysol, two per cent: no growth. Loretin, two per cent: no growth. Loretin-sodium, one per cent: no growth. Iodoform, two per cent: no growth. Control, numerous colonies.

TABLE VII: *Pus from a very Infectious Phlegmon* (containing streptococci and staphylococci).—Carbolic acid, two per cent: retarded growth of streptococcus colonies. Loretin, two per cent: no growth. Iodoform, two per cent: retarded growth of streptococcus colonies. Control, very numerous colonies of streptococcus and staphylococcus.

By the foregoing we can readily see what a valuable preparation loretin is in surgery. It is just as valuable to the dentist in his line. For nearly a year I have been using it in the treatment of pulpless

teeth and teeth having abscesses in all stages, with and without fistulous openings, and where I have formerly used iodoform, etc., and am now ready and fully prepared, from clinical experience, to say that loretin is superior in my hands to any of the many antiseptics I have tried. One pleasant thing to me about it is that now the persistent odor of iodoform in my office is a thing of the past, and patients are no longer asking "What is that horrid smelling stuff?" Also no more nausea, that would sometimes happen when iodoform was used.

The action of loretin is prompt in the treatment of putrescent teeth. I have had a great deal of pleasure in its use in the treatment of putrescent pulps, having used it in several ways, but most in combination with oil of cassia, as this is a pleasant vehicle for conveying the loretin into the tooth-canal.

It may be well to give the method employed in treating these teeth. After having prepared the tooth crown the root-canals should be well opened, going as near to the apex as possible; the medicament is then pumped into the root by means of a broach wound with cotton, then a string of cotton saturated with the loretin preparation is packed in the root and the patient dismissed for a week; upon the patient's return the cotton is removed (of course no saliva is allowed to enter the tooth), and if there is no odor other than that of the medicament, another string of cotton is placed in the root same as before, but this is covered with Gilbert's temporary stopping, closing it tightly; the patient is instructed to return in a week in case there is no inflammation, but should the tooth become sore to return immediately, when the temporary stopping is removed, as the tooth by this tenderness indicates that it is not yet in condition for filling; if the patient returns at the expiration of the week with no soreness in the tooth, it is ready for the temporary or trial filling, which is as follows: Form temporary stopping into cones to fill the canals; this is done by warming the stopping and rolling it between the thumb and finger; remove the dressing that is in the tooth, and with a cotton-covered broach pump in a little of the loretin mixture, following with chloro-stopping; then insert the temporary stopping cones in the canals, filling the crown with white temporary stopping. This filling is generally allowed to remain for two weeks; at the end of this time we are sure that if there has been no trouble it is safe to fill permanently. In doing this the stopping in the roots is not disturbed but allowed to remain, as there is no better root-filling.

The above method is where a fistula has not been established; in case it has, the tooth is opened thoroughly, passing through the apex, the loretin mixture is pumped through the tooth until it appears on the gum through the fistula; this is followed by pumping the chloro-stopping through until it also appears on the gum. The temporary stopping cone is inserted in the roots, the tooth filled with white temporary stopping, and the patient dismissed for from three to six weeks, or until the abscess has thoroughly healed, which is generally in about four weeks, unless there is carious bone or some cause other than simply the abscess. Of course, cases out of the common line are treated according to the cause. The above treatment has proved successful in many cases of long standing. Care should be used not to flood the crown of the tooth with too much loretin, as it has a tendency to darken it. I have had no trouble that has amounted to anything thus far, as I have tried to use care in this direction.

*The Dental Cosmos for July, 1896.*

"DISEASES OF THE ORAL CAVITY A POTENT FACTOR IN GENERAL DISEASE," by Dr. S. W. Foster, Atlanta. Read before the American Medical Association, in the Section on Dental and Oral Surgery. The oral cavity, in its broad range of function, exceeds in importance any other organ of the human body. These include articulation, vocalization, prehension, mastication, insalivation, deglutition, etc. Its employment is constant from the induction of life to the last breath of old age. Its functions are so important that any interfering pathological condition would have manifest effect upon the other organs. This is shown plainly in the disorders accompanying first dentition. When the development of the tooth proceeds more rapidly than the overlying tissues are absorbed, we have local inflammation, the secretions become much increased, pressure on the nervous and vascular supply involves the whole system. The child becomes wakeful, restless and fretful, refuses nourishment; the alimentary canal becomes more active, diarrhoea follows, and if relief is not given, relaxation of the vital forces follows, and we have nausea, vomiting, convulsions, paralysis and not infrequently death. Statistics show that more deaths occur during the period of first dentition than during any other like period during life. When we consider the anatomy of the trigeminus nerve, which supplies the teeth, we rec-

ognize the possible reflex effects upon remote organs. This is a compound nerve, varied in its functions—a nerve of special sense, common sensation and motion; the great sensitive nerve of the head and the face, the motor nerve of mastication, its lingual branch being the nerve of the special sense of taste. It sends important branches to the ear and eye, anastomosing with many other nerves. It is not strange, then, that we have remote lesions originating from disorders affecting this nerve. Neuralgia and earache are among the most common.

The essayist exhibited an unerupted impacted central incisor which had been extracted from the mouth of a lady aged about twenty-five. The lady had suffered from neuralgia for several years, despite the attentions of the best physicians available. She had tried change of climate, and taken every other means suggested for relief, but to no avail. Finally her dentist, noticing the absent tooth, made a careful examination and located it, with cutting-edge pointing upward and almost protruding into the nasal cavity. He removed the tooth by making an incision at the union of the lip with the gum, removing the overlying osseous tissue with burs and chisels. With the healing of the wound the neuralgia entirely disappeared, and the general health was greatly improved.

He also described a case in which the left superior second molar interlocked and impacted the third molar, the coronal surface of which was deflected backward toward the tuberosity of the jaw. The history of the case was of a dull, heavy, gnawing pain about the region of the malar bones, which finally terminated in slight paralysis of the face, from which no relief could be found. The second molar having developed quite a large cavity, she applied to have the tooth extracted. The operator was much surprised at bringing with it the unerupted third molar. Within a few weeks after this operation the paralytic condition disappeared. We believe these cases, as well as many others, are the result of reflex irritation produced by dental disorders.

We frequently have recorded cases of amaurosis as the result of inflamed or dead pulps, or chronic catarrhal trouble produced by a diseased tooth, first producing an inflammatory condition of the antrum and spreading from thence through the nares and various sinuses.

In examining the mouths of many patients suffering with that

hydra-headed monster, dyspepsia, it has proven the exception when the masticating powers have not been destroyed from one-third to five-sixths of their capacity. We know that the balling of food and throwing it upon the stomach day after day will produce dyspepsia, gastritis, etc.; and we must admit that if the inability to properly masticate the food is not the direct cause of this dreadful disease, it certainly goes hand in hand with it. Lower the vitality and you invite disease. The oral cavity is the commencement of the digestive tract—the antechamber to man's vegetative life—and in this respect it is anticipatory to the stomach. Therefore it is reasonable to suppose that any lack of hygienic or any pathological condition that causes a deficiency of quantity or quality of the fluids which are first met with when food first enters the mouth is a hindrance of nutrition, and undoubtedly makes its impression on the stomach.

Often when a patient presents herself for treatment we notice the bloom of life has left her cheeks, her eye has not the sparkle it once displayed, she is anemic, debilitated, and despondency and melancholy brood over her. Her physician not being able to locate the trouble in any special organ, pronounces it a case of "nervous debility" or "giving down of the vital forces," and the use of tonics, with change of residence, is advised. A careful examination of the oral cavity would possibly reveal a seething pit of filth, decayed and broken-down teeth, suppurating sinuses, contaminating the air of respiration, vitiating the oral fluids, poisoning nutrition and consequently lowering the vital forces and breaking down the general health. This is not imaginary, but the real condition of the mouths of many of our patients, nor is it a wonder that the system breaks down.

It is rarely that we see a consumptive in whom we do not find a typical case of pyorrhea, or at least pus exuding from around the necks of the teeth, and it seems that the breathing into the lungs the effluvia from these suppurating sinuses of the mouth might produce this fatal disease.

This leads to the question, what should the co-operation of the physician and the dentist be? Or should the dentist know more of medicine, or the physician know more of dentistry? My conclusion is that no medical college should be without a chair on the principles and practice of dentistry, and our dental schools should, as a rule, teach more of general medicine and surgery.

"SOME NOTES ON THE USE OF GOLD AS A FILLING MATERIAL," by Dr. L. Ashley Faught, Philadelphia. Read before the union meeting of the Maryland State Dental Association and the Washington City Dental Society at Washington, May 8, 1896. Every dentist in full practice must by the pressure of previous training, and in no small measure by environment, have brought his methods used in the service of his clientele into some order and system; in other words, other things being equal, to use a given filling material in a given place.

Leaving out of the question the care of the teeth of very young children and of those mouths of all ages in which the teeth are below medium in quality, he will find that where sufficient remuneration can be obtained his system includes in no small measure the use of gold as a filling material. No matter what his ability to use this material, or what his convictions regarding its utility, he must of necessity look upon its use as a requirement, and on his results with pride and satisfaction, or on the efforts of others with admiration and approval. His inspection of his own work and close observation of that of others will undoubtedly deprecate the ravages and dilapidation caused by its demonstrated misuse; but notwithstanding such outraged feelings, he is brought time and again to look upon it as a most valuable filling material and one whose place in his system has never been nor cannot at present be satisfactorily taken by any other.

The proposition as here enunciated being accepted as demonstrated truth, the best service to be obtained from gold will be in proportion as one has clear ideas regarding its use.

Prominent in the forming of my own ideas, which it is the province of this paper to state, are two essential facts:

First, that work has been done with it which has proven a joy forever; second, that work has been done with it which has ingloriously failed.

Query—Why one result? Why the other?—conditions being apparently equal.

Answer—Difference—first, in method of preparation of cavity; second, in method of insertion of gold; third, in method of finishing fillings; fourth, in method of cleanliness by patient—oral hygiene.

The elaboration of the ideas involved in these four replies

involves the whole subject of gold filling, and I wish right here to disclaim any intention of entering upon their consideration so extensively as to pose as a teacher of the subject. A few points regarding each, which have impressed me as salient, are all that I shall treat.

The preparation of cavities in teeth to receive gold does not admit of frail cavity-walls, does not admit of overhanging walls, does not admit of rough or irregular edges. I have particularly found that good, substantial walls with nicely polished edges are essential to success. I also advise, in approximal fillings, to cut back far enough to expose the point of junction between the gold and the tooth substance so as to admit of proper cleansing. In approximal fillings especially securing the point of contact between the two teeth in gold.

Regarding the insertion of gold into such cavities, I stand here as an advocate of the good old-fashioned method of hand-pressure; the motto ever before me being that the great essential is not rocky solidity, but adaptation to the walls of the cavity with sufficient condensation to prevent disintegration. Mallets may be rapid, but time is nothing and the result everything. I verily believe that many fillings fail from the effort with mallets to obtain unnecessary solidity. He who has cultivated strength in his fingers with that peculiar motion known to a hand-worker, and the drop of the wrist, can properly impact gold without mechanical adjuncts, which only too frequently comminute the marginal edges of the cavity. Small pieces and small points, with not too much annealing, are the other requisites to success. Use, but be cautious in your use of, matrices, and always contour your work.

The proper finishing of fillings I have found to require that the cavity should be filled to a little, a very little, over flush, and never so full as to be excessive, and then a thorough and persistent use of burnishers to the large exclusion, or very cautious use, of stones and files.

My last consideration is not the least in importance, but lies in the hands of the patient. The best work is liable to failure if the patient is careless in cleanliness. Having done all, every effort should be made to impress the need of this great adjunct upon the minds of those to whom the jewels are intrusted.

## Letters.

### ANOTHER LETTER FROM FLORIDA.

MANATEE, FLA., August 10, 1896.

*To the Editor of the Dental Digest,*

DEAR DOCTOR:—All that Dr. Truman says in the *DIGEST* for July, so far as I can see, has no direct bearing on the plan of filling by pressing blocks of amalgam into soft cement and plating over while soft. Dr. Reese, however, describes the plan exactly, and I am sorry I overlooked his article in 1886. We cannot be sure of seeing everything that may be in the body of long reports of societies. I am glad these gentlemen have been moved to write what they have, and I do not regret anything I have written on the subject if it leads to a more general adoption of a plan that I know is not now appreciated at anything like its true value by the profession in general.

I wish to express my appreciation of the line of work touched upon under the head of "Painless Dentistry." I am very anxious to see all these new methods in dental practice commented on by men of such standing that it will give reasonable assurance that we are on safe practical ground. Individual discoveries and improvements will in this way be in nowise impeded. Your enterprise will no doubt stimulate others to renewed efforts. We want order, in place of the confusion that has obtained so long through the efforts of irresponsible vendors of secret methods, compounds, nostrums, etc.

Respectfully yours,

W. E. DRISCOLL.

### SOME HINTS FROM WISCONSIN.

MENOMONIE, WIS., August 15, 1896.

*To the Editor of the Dental Digest,*

DEAR DOCTOR:—I send you a few items. If there is anything new or of value you may publish it; if not, no harm is done.

My experience with sodium peroxid for treatment of pulpless teeth. Bought a can of it over a year ago and it had these cau-

tions printed thereon: "Keep the can closed tightly. Do not spill powder on the floor. Use iron scoop for handling powder. Follow directions." I observed all these rules for several months, but do not see why it is necessary to do so. Could notice no change in it to speak of when can was left open. The second caution is said to guard us against fire, but I have been unable to cause it to assist combustion, no matter how careless I was about spilling it. Can see no use for the third caution, as I have used a wooden paddle and also a steel plaster spatula to handle the powder and have discovered no bad results from so doing.

However, I followed directions and had the following results from its use. Patients felt severe pain when the solution was forced through apical foramen, which continued for several hours, and in some cases produced an acute attack of alveolar abscess. In other cases of chronic abscess the solution produced necrosis of the process around the point of root and caused loss of tooth. In all cases where the solution went through the foramen there followed severe pain, and this was worse in young persons with large foramen. I tried to neutralize it according to directions, but the above was my experience, and I abandoned its use. Will some one tell me what was the matter?

When extracting teeth and blood spots get on clothes the stains can be removed with  $H_2O_2$ .

For convenience in use, cheapness, and as a time saver, I find the wood pulp-canal points superior to anything else. After the canal has been pumped full of chloro-percha, twist off the wood point in canal.

An old broken pair of beaked forceps makes a good articulator for crown and bridge work.

Yours truly,

W. H. BAILEY.

---

#### NEW YORK LETTER.

NEW YORK, August 17, 1896.

*To the Editor of the Digest,*

MR. EDITOR:—New York almost, but not quite, deserted. With the mercury at  $100^{\circ}$  it is too hot for active practice. Some practitioners are across the water attending the Society of American Dentists convening in Dresden. Some have been in attendance at

the New Jersey State Association at Asbury Park. More have been at Saratoga holding up the American Dental Association, and many are away. A certain number, of course, stay by their offices, hoping to catch a stray patient, for there are such in a large city like New York.

The avenue and "painless" practitioners are always open and the latter are on the increase, if their advertisements are an indication. We learn that, for a wonder, they have not as yet infested the Pacific coast. What does it mean?

We have been spending a very pleasant two weeks at the native town of the late Dr. Dwinelle, Cazenovia, Madison county, N. Y. At the time of his death we were invited by the Odontological Society to represent it at the funeral and to lay a beautiful wreath on his casket. Except for the doctor's successor, Dr. Phelps, now in active practice at 82, we were the only dentist at the funeral. However, it was extreme winter weather at the time, the mercury at  $24^{\circ}$  below zero and a foot of snow on the ground.

We were so much pleased with the outlook that we fancied we would like to visit the place in the summer time, and we have done so, very much to our pleasure. We spent the last two weeks of July there. It is an unusually well-located town, 1,300 feet above the sea level, with a rich farming community, three hotels, dozens of cottages for summer boarders, and some magnificent summer residences. There is a beautiful lake right in the front yard, as it were, of the town, so that altogether it is an attractive place for summer visitors, who generally number some seven or eight hundred. There is evidence of wealth and refinement on all sides. Cazenovia has cause to boast of many born there who have reflected honor upon the town, such as ex-Secretary Fairchild, Senator Fairchild, Dudley Warner, Armour, and many others.

The house that our late co-worker lived in is still standing, in a good state of preservation, although built in 1806, and is now the home of the doctor's sister. The father was a lawyer and at one time represented his town in Congress.

We visited the grave of Dr. Dwinelle in the neat and attractive cemetery, but as yet no stone marks the place. We think it would be a nice thing to provide one by contributions from the profession, and we believe it needs only to be suggested to be promptly carried out. Dr. Dwinelle was not sparing of his help to those in need.

We are indebted to Dr. Phelps for many kind attentions during our stay in Cazenovia. He has earned a coveted citizenship by his conscientious dental professional life. Eighty-two years is a ripe old age to be found still at work. He has in his possession the chair with which Dr. Dwinelle started practice.

During our stay we met our old friend, Dr. William B. Hurd, of Williamsburg, who was spending the summer at Cazenovia.

Is it not a little strange that the journal of which Dr. Dwinelle was first editor did not, so far as we know, make any notice of his death?

We learn that the American Association at Saratoga did not have a large attendance, nor did it vote to go to the Pacific coast.

Cordially,      NEW YORK.

---

**THE WHALE CURE FOR RHEUMATISM.**—It is reported that at the town of Eden, a place in Australia, which stands on the shores of Twofold Bay, there is a hotel where rheumatic patients congregate. Whenever a whale has been taken the patients are rowed over to the works in which the animal is cut up, the whalers dig a narrow grave in the body, and in this the patient lies for two hours as in a Turkish bath, the decomposing blubber of the whale closing around his body and acting as a huge poultice. This is known as the "whale cure for rheumatism."—*Annals of Hygiene*, July, 1896.

---

**ARTIFICIAL BLOODLESSNESS.**—*The Medical Press* reports an address by Von Esmarch. It was through accident that in 1873 he came upon his method of artificial bloodlessness. A Danish lady had an inflamed finger and wished to have a mourning ring removed. To effect this, he wrapped a thread closely round the finger from the tip up to the ring. He then passed it under the ring and unwound the thread in the reverse direction. The ring was then easily removed on account of the artificial bloodlessness thus produced. This was the principle of producing artificial bloodlessness in a limb. By encircling the limb in an elastic tube the vessels were kept empty as long as necessary. It was objected to this method, however, that the procedure caused paralysis, that the edges of the wound died, and that after removing the tube the bleeding was more profuse than before. He does not use the tube any longer but an elastic band, but in operation on the shoulder and hip joint the elastic tube was still indispensable. The following is the procedure in the Kiel Klinic: The limb is first of all held perpendicular if possible, and enveloped in an elastic bandage. The elastic girdle is then applied at the desired level, but care must be taken not to cause paralysis. On the other hand it should not be applied too loosely, so that some expertness is required. After the operation the vessels are ligatured, the wound closed, and the girdle taken off only after a good compressing bandage had been applied.

# The Dental Digest.

PUBLISHED THE

TWENTY-EIGHTH DAY OF EVERY MONTH.

---

## Editorial.

---

### EXPLANATION OF THE DELAY.

Owing to the illness of the associate editor, who does most of the journal work, and who has just recovered from an attack of appendicitis, this issue of the journal is nearly three weeks late in appearing. The September DIGEST will be published about the 7th of October and the October number at the usual time, the last of that month. We trust our readers will pardon the delay in view of the circumstances.

---

### SPECIAL MEETING OF THE PROTECTIVE ASSOCIATION.

One of the most important meetings held at Saratoga, from our standpoint, has not been mentioned. We allude to the meeting of the members of the Dental Protective Association. Not the one in the general meeting, where simply an explanation of the progress of the litigation was made, but the special meeting of the members.

As we had been working on this reform movement for two or three years, with a view of remedying the abuses practiced upon us by the supply companies, and had not had an expression from the representative men of the profession, we called this meeting to ascertain whether or not we had the sympathies of the members and whether we would have their substantial co-operation. The result was merely a double confirmation of our former belief—that such a movement was needed and would receive the support of the profession.

The uniformly substantial and liberal expression of the members present was more than encouraging, and we feel sure that when the membership of the Protective Association fully understands what this movement means they will furnish all the influence and support necessary to more than fulfill our expectations and prophecies.

The work of the Protective Association has been a success. The organization of the members of the profession into the Association only a partial success. The success of the Protective Supply Company means a completion of the organization of the Protective Association. It is not to be expected that success in either of these lines can be accomplished without considerable time and effort being expended.

It is true that the occupation of a dentist bars him from the average amount of association with his fellow practitioners and the members of the community in which he lives, dwarfs his estimate of the future, and makes him look with suspicion upon great movements having for their object the benefit of all; we therefore solicit the co-operation and encouragement of those who understand the scope of the work contemplated, in order to interest those who need the encouragement. No class of men would be greater benefited by what this movement contemplates than the dental profession.

We will give more of what this means another time.

---

### THE RECENT MEETING OF THE AMERICAN DENTAL ASSOCIATION.

Our meetings this year were not up to the average, and various causes have been assigned by different ones, viz., the wrong time of year, the wrong place, the fact that last year's proceedings were not published in time so that members could see in which section they belonged and who the officers of the sections were. The hot weather has also been given as a cause, and we will add another, which we think the most plausible—the hard times. There is also another reason which has held good this year, as it has in former years, for the American Dental Association not doing better work; it is that we do not have the co-operation of the state and local societies.

We have urged for some years that the meetings should not be held at a time when the dental profession take their vacations. Many do not attend on this account, and those who are present have relaxed their nervous energies and are not apt to participate with the vigor to give successful results. It is true that the weather was extremely warm, but if it had been cool we do not think there would have been many creditable reports of the sections.

We have mentioned, as a cause, the stringency of the times. When business interests are depressed as they have been for the last two or three years, especially during this last year, the average person neglects many duties. We are not as likely to do our best in professional work when our patients are coming to us cramped for the necessary means, and are feeling depressed by the hard times, often annoying us by their discomfiture of mind and body caused by the uncomfortable conditions of their private business. We cannot do as well as we could if all were prosperous, with plenty of money to pay their bills, and so felt good natured. The depressed state of business interests has fallen very heavily on the dental profession, and it would be folly to urge that this has not had its influence on our treatment of our patients, and certainly we do not do as much literary or professional work outside of the office, as when the financial conditions are prosperous. Not only are professional men annoyed by ungenerous treatment given by their patients many times, but also the wherewithal to pay their own bills being lacking, is very often a great barrier to good professional work. Hence we believe the hard times to be the most important reason mentioned as a cause for our unsuccessful meeting this year.

Most important of all, the national body of the dental profession should have members of every section in every state and local society, to gather during the year the good work that is being done and to condense it for the chairman of the section. Therefore, the chairman of each section should be alive to this duty and should see that in every society there is some one looking after the interests of his section, accumulating the important work of all the societies, to be presented in well digested reports at the annual meeting of the American.

We have urged this many times and will not dwell longer upon the matter here, but in the near future will try and define a little more in detail what we think this work should be. When the members of the various societies act in concert with the National Association we will have what is certainly much desired—a concentration of all the work of the local societies each year; and until then we cannot do the greatest work in our profession.

---

**ACONITINE.**—One two-hundredth grain every two hours relieved a most obstinate facial neuralgia on the second day.—*Hausberger.*

## Notices.

---

### DENTAL SOCIETY OF SOUTHWESTERN MICHIGAN.

The Dental Society of Southwestern Michigan will hold its semi-annual meeting at Dowagiac, September 8 and 9, 1896. The Executive Committee is arranging a very interesting program and a good attendance is expected. A cordial invitation is extended to the profession in this and other states.

DR. E. I. BACKUS, Sec'y, St. Joseph, Mich.

---

### NEW JERSEY STATE DENTAL SOCIETY.

At the twenty-sixth annual meeting of the New Jersey State Dental Society, held at Asbury Park, N. J., July 29-31, inclusive, the following named officers were elected: President, Harvey Iredell, D.D.S., New Brunswick, N. J.; Vice-President, J. L. Crater, D.D.S., Orange, N. J.; Secretary, Charles A. Meeker, D.D.S., Newark, N. J.; Treasurer, George C. Brown, D.D.S., Elizabeth, N. J.

DR. CHAS. A. MEEKER, Sec'y.

---

### MINNESOTA STATE DENTAL ASSOCIATION.

This association held its thirteenth annual meeting in Winona, August 19-21, 1896. The following officers were elected: President, Dr. W. D. James, Tracy; Vice-President, Dr. F. S. Robinson, Plainview; Secretary, Dr. H. L. Cruttenden, Northfield; Treasurer, Dr. H. M. Reid, Minneapolis; Chairman Executive Committee, Dr. O. A. Weiss, Minneapolis; Master of Clinics, Dr. T. B. Hartzell, Minneapolis. The next place of meeting will be Minneapolis.

DR. H. L. CRUTTENDEN, Sec'y.

---

### WISCONSIN STATE DENTAL SOCIETY.

The twenty-sixth annual session of this society was held in the State House at Madison, July 21-23, 1896. There was an attendance of over one hundred dentists, and the meeting was in every sense successful, enjoyable and profitable. The papers, discussions and clinics were of a high order and very creditable. For the third time Madison was chosen as the next place of meeting.

The society has taken on renewed vigor the past few years by the influx from all over the state of young and active men who are in earnest for better things. The spirit of association is abroad in the state. The Southern Wisconsin Dental Association is a thriving young body whose annual meeting will be held at Mineral Point in May next, and two or three similar organizations are in near prospect. So, what with our new school in Milwaukee also well established, the professional and ethical aspect of dentistry in Wisconsin seems encouraging.

CHAS. C. CHITTENDEN, D.D.S., Madison.

## NORTHERN IOWA DENTAL SOCIETY.

The second annual meeting of the Northern Iowa Dental Society was held at the Hotel Orleans, Spirit Lake, August 11-13, 1896. The attendance was good, taking into consideration the change of time being made so late that quite a number who wished to could not meet with us.

The sessions were well attended and great interest was taken in the discussions. The clinic of Dr. Leonard, of Waseca, Minn., attracted considerable attention, both in the preparation of the cavity, a proximate one in a lower molar, forming a supplemental cavity for retention, and filling with the matrix, using a peculiar clamp of his own to hold the matrix firm at the cervical border. He imbedded a pin in the amalgam, running from the main cavity to the supplemental cavity, so as to strengthen the weak portion of the filling. Dr. Breemer, of Mason City, prepared a cavity in a central incisor involving the proximate and incisal walls, using a screw post. Drs. Breemer and Richardson, of Mason City, Dr. Begun, of Des Moines, and Dr. Leonard, of Waseca, Minn., filled the cavity with gold, Dr. Leonard using a smooth foot plunger. Dr. Begun dressed two pulpless teeth, using sodium and potassium. Dr. Clack, of Clear Lake, administered gas and extracted a tooth. Dr. Topliff, of Decorah, inserted a bridge. Dr. Richardson, of Mason City, exhibited a number of jacket crowns, but was unable to demonstrate baking with his oil furnace. Dr. Simmons, of Decorah, injected for the extraction of two teeth.

The officers for the ensuing year are: Dr. J. J. Grout, Rock Rapids, President; Dr. Guy Huntley, Mason City, Vice-President; Dr. W. H. Steele, Forest City, Secretary; Dr. A. N. Ferris, Waterloo, Treasurer.

The next place of meeting will be at Mason City, the first Tuesday in September, 1897.

We added twelve to our membership, making over forty members at our second meeting, and hope to double that number at our next meeting.

We hope that next year there will not be a dentist in northern Iowa who will not be a member of the Northern Dental Society, a subscriber to the DIGEST and a member of the Dental Protective Association.

DR. E. D. BROWER, Le Mars, Ia.

---

HAYSEED SPROUTED IN THE EAR.—Dr. Macnaughton Jones reports a case where the patient had been suffering from noises in the ear for some years, and had other evidences of middle ear deafness. He sought advice for the deafness, being quite unconscious of the presence of any foreign body. On examining the meatus, what appeared to be a pink sprouting mass of fungus was seen with the transmitted light. The appearance was most puzzling, and it was not until the sprouting hayseed was withdrawn that its nature was discovered. It was quite firmly attached to the walls of the meatus, being removed clean with the lever forceps. The patient then remembered having, over two years previously, at harvest time, suddenly felt as if something had entered his ear, and the tinnitus began.—*Journal of Laryngology, Rhinology and Otology*, June, 1896.

## News Summary.

**A BERLIN SOCIETY OF AMERICAN DENTISTS.**—The dentists of Berlin who are graduates of American dental colleges, at a meeting recently held, decided to form an organization.—*Medical Record*.

**GRATITUDE OF THE PATIENT.**—The gratitude of the patient is well known to me—it is part of the disease. It comes on with the fever, improves during convalescence and is cured by a return to health.—*Vaquerie*.

**SOUVENIR OF SARATOGA.**—The book of views of Saratoga, which Mr. E. T. Sawtell, the New York City agent for Borolyptol, distributed to the dentists attending the American Association, was very well gotten up and a desirable souvenir.

**STRENGTH IN COARSE BREAD.**—After analyzing various qualities of flour, M. Girard informs the Paris Academy of Sciences that the common belief that fine white bread has less nutritive power than coarse brown bread is wrong, as both the fine and the coarse breads contain practically the same amounts of gluten and phosphates.

**NEW LOCAL ANESTHETIC.**—In the *Courrier Medical*, Loup describes a method of inducing local anesthesia which he claims to be most suitable for small operations. He employs olive oil which has been boiled for five minutes, and states that in dental operations it is equal to cocaine, without any of the "dangerous possibilities" attached to the latter. He admits its sole action is "by pressure upon the surrounding tissues."

**FOREIGN BODY IN THE TONGUE.**—M. Derville communicated a case of foreign body in the tongue, to the *Societe des Sciences Medicale de Lille*. The patient was ignorant of its presence; it is interesting from the fact of its way of penetration. The one injured, a man 55 years of age, had been examined by several physicians who had diagnosed a lingual gumma, the tumor presenting the characteristics of a gumma. On palpating the tongue M. Derville saw a thin stream of yellowish serous fluid oozing from the dorsal surface of the tongue, which led him to probe the track; passing in between one and two centimeters the probe struck against a hard substance which was extracted after incision of the tongue. This piece of foreign body was a bit of amber  $2\frac{1}{2}$  centimeters long by 1 in breadth, whose presence was explained by the following story:

Six months before, the patient, being somewhat under the influence of drink, in a row received a blow from a fist in his face, while he had his pipe in his mouth. Immediately, without feeling any severe pain, he spat a little blood and noticed that the end of his pipe was broken; the amber end-piece was missing, and could not be found in spite of all searching for it. During the night the tongue swelled considerably without being very painful. This swelling partly subsided after using gargles, but since that time the tongue had not at any time resumed its normal, previous volume.—*Le Bulletin Medical*, 1896, 3, page 16.

# “No. 1” Dental Engine.

MODERN DESIGN. BEST WORKMANSHIP.



WITH 14 INSTRUMENTS AND OILER.

PRICE, **\$38.00**

(Boxing 75c. extra.)

Students requiring the best value for their money will recognize the efforts we are making to supply their wants by furnishing a highly finished Dental Engine of modern design at moderate cost.

This Cable Arm Engine, supplied with our No. 1 Handpiece, is constructed upon *correct* mechanical principles, and is the easiest running Dental Engine made.

The Drop Pulley Head is supplied with *long* bearings, insuring steady running. The Hub, as will be seen in the cut (C), is chambered so as to *center* weight of wheel. It will be seen also that the Engine is supplied with a rocking standard or upright.

A slight upward toss of the cable raises the arm into position. Pressure on the thumb piece at A lowers it.

We supply a Flexible Sleeve and Nickel Plated Water Cup with every Engine.

Patented October 12, 1895.  
Weight of Driving Wheel, 13 pounds. Diameter of Driving Wheel, 12 inches.

**Dental Protective Supply Co.,**  
1101-3 CHAMPLAIN BUILDING, CHICAGO.

# EUTHYMOL

To any Doctor of Dental Surgery who will enclose to us his professional card, we shall be glad to send a trial package of Euthymol free of charge.

A few drops of Euthymol in half a glass of water removes all disagreeableness from the mouth and leaves a delightful sense of cleanliness.

**Whitens the Teeth.  
Sweetens the Breath.**

Offensive odor of the breath may be overcome by the habitual use of Euthymol. Have patient add a teaspoonful to half a glass of water and gargle thoroughly; and take internally three or more times daily 20 to 30 drops in a little water.

PRICE TO DENTISTS:

**\$7.50 net Per Doz. Pints.**

**PER GALLON, \$4.50**

(IN HALF-GALLON CONTAINERS).

**PARKE, DAVIS & CO.,**

DETROIT, NEW YORK,  
LONDON, Eng.

KANSAS CITY, U. S. A.  
WALKERVILLE, Ont.